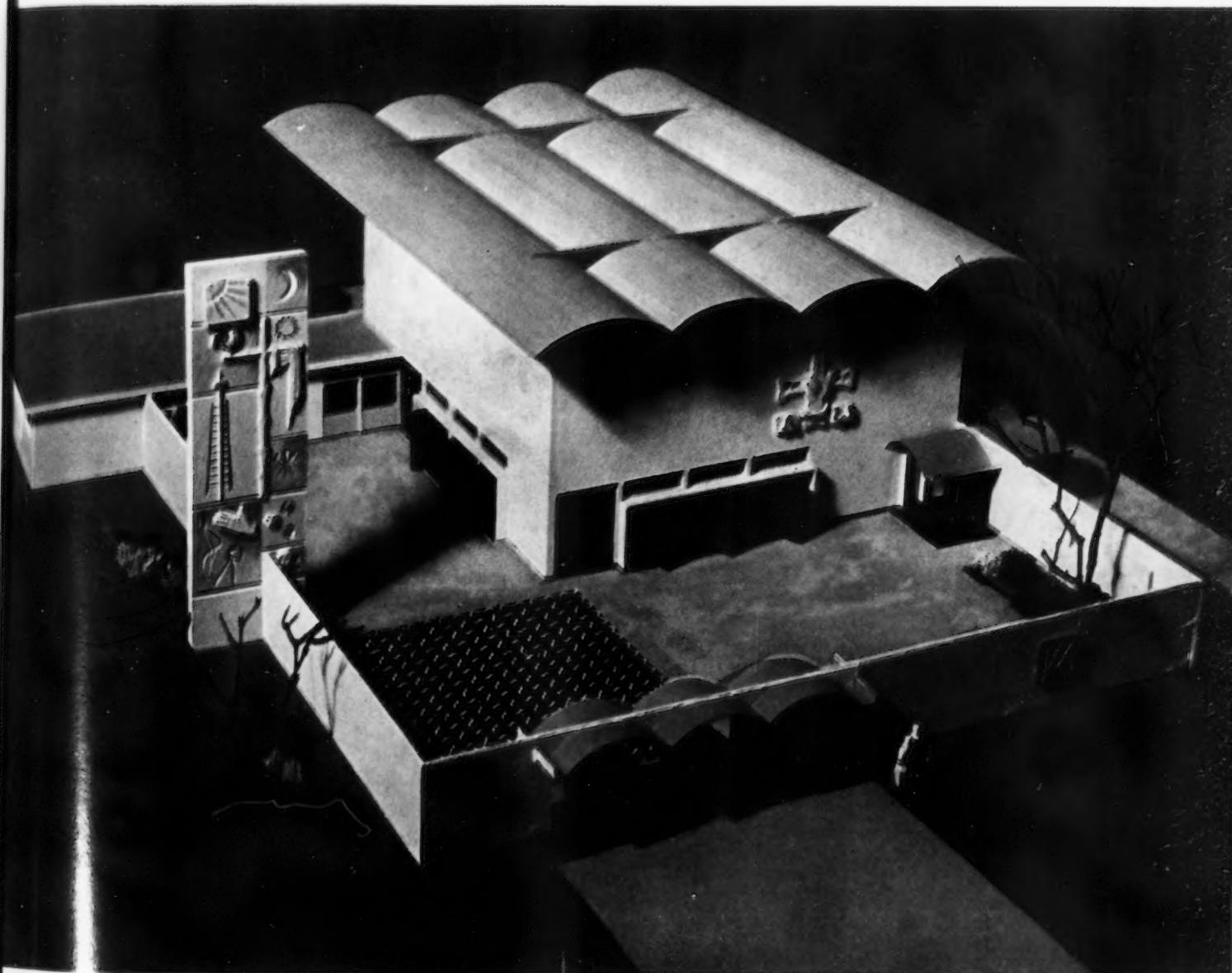


ARCHITECTURAL

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BUILDING TYPES STUDY NUMBER

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RELIGIOUS BUILDINGS

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WRITE FOR CATALOG

Coast-to-Coast Network of Branch Warehouses and Distributors

ARCHITECTURAL RECORD

December 1953 Vol. 114 No. 6

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Combining the tradition of the church and the vitality of contemporary thinking presents architects with an interesting challenge. It would be rash to say that churches here shown give any final answer to that problem, but they are certainly important contributions of our times. This Building Types Study is introduced by messages from philosophers eminently qualified to speak for three religious faiths.

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COVER: Model of church at Puerto Ordaz, Venezuela (pp. 124-127). Photo, R. H. Althoff

Traveling Within an Airport

Circulation problems of an airport, as solved in an immediate scheme and a long-range master plan, both the work of an architectural team. Bradley Field Airport, Windsor Locks, Conn.; Thompson & Barnum, architects

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Continued on next page



ARCHITECTURAL RECORD

Continued from page 5

Newest Version of a Suburban Store

The branch store in a large shopping center has by now accumulated a great deal of thinking but each new one seems to add something fresh. This one is the latest of a considerable string of suburban stores by this firm, and offers many ideas in design for merchandising.

Branch Store in Stonestown for Joseph Magnin; Welton Becket and Associates, architects

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Seven Houses by Architects

Again this month the RECORD's house section reaches the mystic number seven. Seven houses, by architects, presented for rapid viewing by architects. What ties these seven together is (you should pardon the expression) they have their structures exposed. Or, to be more precise, architects will readily see how structural devices free the plan.

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THE RECORD REPORTS

PERSPECTIVES

HIGH FRECKLESBY: The impudent cartoon here reproduced illustrated the principles set forth in a gravely particular article on how PLANNING could correct the problem of "rural sprawl" in the typical English village of Frecklesby, "a parish of three thousand acres and five hundred people approx., in a rural area infested with trees, wild flowers, vermin, birds and needlessly tortuous lanes."

HOW MUCH ATOMIC DEFENSE can the nation afford? A study issued by the National Planning Association asserted the U. S. economy without undue strain can support a defense program costing from \$70 billion to \$75 billion a year. The study was made by a special committee headed by Ralph J. Watkins, research director for Dun & Bradstreet, Inc., of New York.

DRIVE-INS FOR TRAIN TICKETS: The Chesapeake & Ohio Railroad has opened drive-in ticket windows at two locations in Richmond, Va. — one suburban and one downtown. They are believed to be the first drive-in facilities established for purchase of train tickets. Five more are to be established in Richmond suburbs — all in cooperation with First and Merchants National Bank of Richmond — and in other cities in cooperation with local banks.

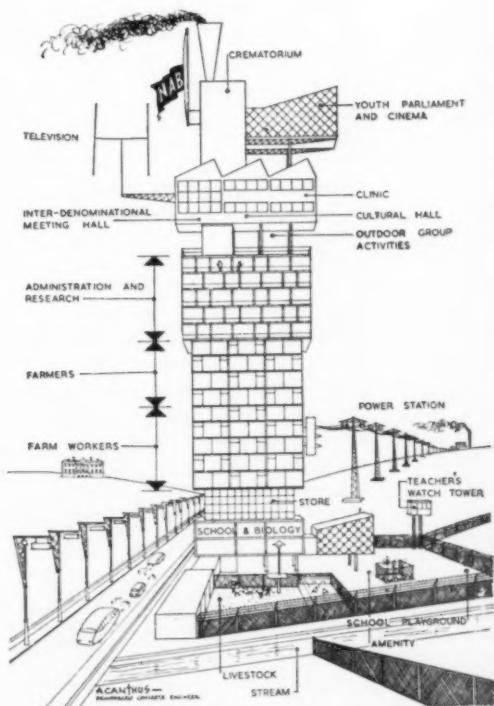
IKE AND ARCHITECTURE: Current installment — the President's reaction to the strictly contemporary Eisenhower Museum (ARCHITECTURAL RECORD, August 1952, page 22) which now shares the site of his old family home at Abilene. In sum, he had no comments on the architecture, but he thought the museum was terrific. Jack Beardwood of the office

of Welton Becket and Associates, associate architects of the project, was at the President's elbow throughout the tour and he reports the President was enthralled with the exhibits — which range from a photo of his high school football team to the original of his message to the Chiefs of Staff advising them that the war in Europe had been won. He admired the lighting (there's no daylighting in display areas) and the deep green color of the walls. In the foyer he was intrigued by the SHAEF insignia in the terrazzo floor and, looking at the walls, asked: "Now, what are you going to do there?" Told there would be murals, he had some suggestions to make on the proposed designs — one is to be a tribute to the armed forces; the other a five-panel representation of the President's life. The museum will eventually have another wing — to be used perhaps for research on some special project; a firm decision hasn't yet been made. Architects are Cayton and Murray.

TEMPORARY: At the recent regional conference of the American Institute of Architects' Middle Atlantic District, William N. Denton Jr., president of the Washington Metropolitan Chapter, ruefully satirized the chronic confusion about the demolition of Washington's "temporary" buildings. He said he expected to see some agency building a temporary building to house an agency to discuss the possibility of tearing down the temporary buildings now (and since World War I) blighting the Washington landscape.

OWNER-OCCUPIED HOUSES are more numerous than rented premises in the United States today, according to the 1950 census figures, which showed an increase from 43.6 per cent owner-occupied in 1940 to 55

per cent in 1950. Now the National Association of Home Builders has completed a survey of the census figures which shows that Michigan leads the nation in percentage (67.5) of home owners. Minnesota (with 66.4) is next and North Dakota (with 66.2) is third. Other leaders (in order) are Indiana (65.5), Idaho (65.5), Oregon (65.3), Utah (65.3), Washington (65), Kansas (63.9), Wisconsin (63.5) and Iowa (63.4). Not surprisingly, New York — with more than half its population concentrated in a city of apartment dwellers — ranks lowest in percentage (37.9) of home owners, though in *number* of owner-occupied dwellings (1,638,860) it is outranked only by California (1,811,684) and Pennsylvania (1,739,833).



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CONVENTION SNAPSHOTS—1. Northwest: conference executive committee: Holman J. Barnes, Portland; O. J. Ballas, Missoula, Mont.; John S. Detlie, Seattle, vice chairman; Waldo B. Christensen, Seattle, chairman; Frederick C. Hummel, Boise; Thomas R. Adkison, Spokane; Charles T. Pearson, Tacoma. 2. Middle Atlantic: Regional Director Marcellus Wright Jr., Richmond; A.I.A. President Clair Ditchy; William Denton Jr., Washington-Metropolitan (host) chapter president. 3. Texas: new officers Grayson Gill, Dallas, first vice president; Edwin Carroll, El Paso, president; Albert Golemon, Houston, regional director nominee; and R. Max Brooks, Austin, second vice president. 4. Ohio: Retiring Ohio President Rollin L. Rosser and the peripatetic Mr. Ditchy. 5. Central States: Leonard Wolf, Iowa State College architecture head; J. Woolson Brooks, convention chairman; Julian Eckles, St. Louis; Kenneth E. Wischmeyer, St. Louis

THE GROWING STRENGTH of regional and state chapter programs in the American Institute of Architects and the increasing concern of architects with the broader problems that affect their practice were impressively demonstrated in the nine most recent A.I.A. meetings. At six regional conferences—Great Lakes, Northwest, Central States, Middle Atlantic, Texas and Sierra Nevada—open to A.I.A. members in 23 states, the total registration recorded or estimated was 2753, or well above the highest total ever recorded for an A.I.A. national convention.

The subjects chosen for the programs of this series of meetings offer an index to the current special concerns of architects across the country: public relations was discussed at every meeting; the architect's role in the community was a recurring theme; what clients think about architects was another; the architect's responsibility in city planning and civil defense still another.

Whither Cities?

A familiar problem that takes new urgency from current circumstance, both domestic and international, occupied some 800 architects meeting in Washington, D. C., October 21-23 for the A.I.A. Middle Atlantic Regional Conference on Urban Design and Redevelopment. A very wide range of views was expressed and intensely debated. At one pole, pleading the case for dispersal, was Tracy Augur, director of the urban targets division of the U. S. Office of Defense Mobilization and erstwhile city planner: "The defense factor, in my opinion, should come ahead of every other consideration in city planning"—but fortunately, said Mr. Augur, the same space standards that serve to reduce urban vulnerability to atomic attack also serve the civilian planner's goal of greater

livability. At the other pole was Dean José Sert of Harvard's Graduate School of Design: "You cannot disturb the historical pattern of towns," he said. Although he enumerated some steps he thinks might be used to relieve congestion—shopping centers moved to the outskirts of cities and perimeter parking areas for city workers' cars, for example—Dean Sert did not think it feasible to plan for dispersion on a wide scale. The architect's big job, he said, is to redevelop central city areas.

Ethics—and the Atomic Age

Northwest architects met in Sun Valley October 9-11. Although no "public relations" session was on the program the subject was very much alive in both an address by John Detlie—"Making Ethics Work"—in which he outlined a project undertaken by the Seattle Chapter intended to improve comprehension and consequent use of the A.I.A. Standards of Practice; and a seminar "Opportunity for Community Leadership" led by Frank Roehr. A seminar on atomic energy brought B. E. Brazier, Salt Lake City architect whose firm has done much of the architectural work on the Los Alamos installations of the Atomic Energy Commission, and Engineer A. E. Dahl of Berkeley, Cal., to the rostrum to discuss architectural implications of the development of atomic energy.

Focus on the Client

That universal preoccupation of all architects everywhere—"That Human Being Called the Client"—was the theme of the eighth annual conference of the Central States District of the A.I.A. October 15-17 at Des Moines. The client point of view was explored in seminars on the physical sensations of the client as they affect architecture, sociological factors affecting "the archi-

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THEIR ROLE IN WIDER WORLD

textural preferences of the Smiths and the Joneses," and—with three architects and three "clients" participating—the question "Has architecture progressed since 1900?"

For Better Buildings

California Council of Architects' convention at Coronado October 15-17 centered main program interest in an all-day seminar "Better Buildings and How to Get them" (see box, page 12). Sierra Nevada Regional Director Charles O. Matcham presided at the regional meeting, which presented a public relations discussion by a panel of five architects headed by Francis Joseph McCarthy, co-chairman of the A.I.A. national Public Relations Committee. Another group that met during the C.C.A. convention was the Women's Architectural League.

Focus on the Architect

The role of the architect in his community was the subject of the main seminar at the annual convention of the *Tazas* Society of Architects at Austin November 4-6. After a summary of the architect's historical role, by George Bain Cummings, national A.I.A. secretary, and a "keynote" address by Philip Will Jr. of Chicago, architects had a chance to see themselves as others see them: six leaders in business and the professions gave 10-minute talks on how they view the profession of architecture. Architectural students of the state were invited to attend the convention and had one day of their own arranged by Harwell Harris, head of the University of Texas architecture department—a talk, "Architectural Imagineering," by O'Neil Ford; another by James Pollard on "Space Frames"; and an address by Willem Dudok, Dutch architect and town planner currently touring the U.S.

under A.I.A. sponsorship. Architects were invited to attend the student sessions.

Dues and Advertising

Great Lakes region council sessions, held at Detroit September 18-19, produced a lively discussion on A.I.A. dues and what members get for them and some suggestion that the \$5000 ceiling on \$25 dues ought to be raised. The troublesome question of advertising—when it is and when it isn't—was also raised.

Salute to History

Ohio architects' theme—Sesquicentennial of Ohio Architecture—made their annual meeting at Youngstown October 14-16 part of their state's year-long sesquicentennial celebration. There was a workshop on public relations and architectural historian and teacher Talbot Hamlin, F.A.I.A., of Columbia University's School of Architecture, was the main speaker at the annual banquet. John W. Hargrave succeeded Rollin L. Rosser as president of the society. Others elected: C. Melvin Frank, first vice president; Leon M. Worley, second vice president; John Macelvane, third vice president; Charles J. Marr, secretary; Eugene F. Schrand, treasurer.

Dual Responsibility

New York State architects held their annual convention at the Lake Placid Club, a setting conducive to recreation as well as deliberation. Subject of the single seminar, led by Carl W. Clark, was public relations. Harvey Wiley Corbett, F.A.I.A., made a major address "The Architect's Responsibility to His Client and His Community." Other speakers were Mr. Ditchy and Hugh Ferriss, president New York Chapter. New officers were elected (see photo).



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6. VIPs at Ohio luncheon: W. B. Huff, convention chairman; John Suppe, senior past president; John N. Richards, past Great Lakes Regional Director; George B. Cummings, A.I.A. secretary; C. Melvin Frank, Ohio vice president; Rev. P. W. Gauss; President Rollin L. Rosser; Talbot F. Hamlin; W. B. Damon, convention co-chairman. Facing camera in left foreground—Great Lakes Regional Director Raymond Kastendieck and new Ohio president John W. Hargrave. 7. New York's new officers: Harry M. Price, second vice president; Morton G. Wolfe, first vice president; John W. Briggs, third vice president; Adolph Goldberg, president; Trevor W. Rogers, secretary; Martyn Weston, treasurer. 8. Speaker Harvey Wiley Corbett. 9, 10, 11. Coronado, where Sierra Nevada Region, California Council and Women's Architectural League met at same time. 9. W.A.L. officers Mrs. Henry Wright, outgoing chairman; Mrs. Chester Root, new chairman; Mrs. Winfield Hyde, new secretary-treasurer; Mrs. Zimmerman, outgoing secretary-treasurer. 10. John Austin, "dean" of California architects; California Council President Charles Fry; Frank Hope, convention manager. 11. Sierra Nevada Regional Director Charles O. Matcham; A.I.A. Past President Glenn Stanton; 1953 A.I.A. Fine Arts Medal recipient, Sculptor Donal Hord

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PUBLIC RELATIONS: WHAT EVERY ARCHITECT SHOULD KNOW

New A.I.A. Handbook Offers Guide for Individual Action To Encourage Client-Public Understanding of Architecture

WHAT CAN THE INDIVIDUAL ARCHITECT do to increase public appreciation of architects and architecture? *A Public Relations Handbook for Architects*, to be published later this month as the latest in a series of "tools" developed for the public relations program of the American Institute of Architects, provides some very specific suggestions.

How do you reach the new building client, innocent of architecture and forever bombarded by advertising which boosts the package deal and production-line housing? The handbook says you can reach the new client by:

1. Explaining your services and how these services can contribute to your community.

2. Actively seeking leadership not only in the planning and building in your community, but also in the civic and social life of that community.

3. Improving client relations. "Public relations begins at home, in your own architectural office—in better design, better specifications, better administration, better supervision, better office atmosphere (employee courtesy, letterheads, etc.)."

How do you go about "explaining your services"? The handbook details several kinds of printed matter useful in client contact—a brochure or folder

setting forth in simple, non-technical language what decisions are faced by the prospective client and what the functions and responsibility of the architect are; a folder giving specific information about you or your firm; on major jobs, the "presentation" brochure showing (and carefully explaining) the proposed scheme for the project. Other ways of "reaching the client" recommended by the handbook: architectural exhibits (at museums or art centers, at building shows, at conventions or conferences of "client" groups, at fairs), speeches before local civic groups, architect's signs on work in progress, color slides of your best work to show in initial interviews with the client, "neat and handsome" scrapbooks, postage "advertising," direct mail—reprints of suitable published articles sent to key members of your community.

How do you work toward making architectural leadership felt in civic affairs? The handbook suggests cooperation with community organizations in such areas as these:

1. Neighborhood planning, and every effort for better community planning, urban redevelopment.

2. Observing, formulating, checking on legislation such as building and zoning codes.

3. Offering general information on public problems and procedures—making architects authorities on all community building.

4. Studies of traffic, housing and recreational facilities.

5. Medals and awards to practicing architects to help create prestige for better planning and design.

The 92-page handbook, prepared by

What Can Individual Do?

In his own community, the architect can encourage an atmosphere of good public relations for himself and his profession by—

1. Promoting the service of the architect in all personal contacts with clients, potential clients, friends and neighbors.

2. Joining community action groups.

3. Raising a voice for community betterment.

4. Giving active support to any assignment phase of his chapter's program.

5. Building a congenial relationship with such public opinion channels as the local press, radio and TV stations.

6. Enlisting the aid of others in obtaining well-deserved, tasteful publicity.

7. Combatting, by the written and spoken word, any public impression of (a) the architect as a "mere dispenser of blueprints"; (b) architecture as "an expensive luxury"; and (c) the profession as an "ivory tower."

— *A Public Relations Handbook for Architects*

ARCHITECT-CLIENT FORUM OFFERS ADVICE

An all-day forum on "Better Buildings and How to Get Them" held at the recent Coronado convention of the California Council of Architects brought forth six major recommendations from the joint architect-client panel:

1. Correct three public misconceptions about planning—(a) the architect is an embellisher; (b) the architect ought to be able to guarantee costs; (c) the architect's fee is "added" to building cost—a luxury, not a necessity.

2. Keep the public more closely advised on costs and how the cost picture varies with different kinds of buildings. The panel agreed that 60 to 90 per cent of clients are "first-time" building clients.

3. Teach the public how to help keep costs down—that changes cost money; that spending for accurate cost data pays.

4. Recognize building as a team operation; work for better organization of team.

5. Make the nature of architects' services better known.

6. Strive for an adequate total planning budget for buildings—present architectural fee allowances compare with allowances as high—in the aircraft industry, for example—as 33½ per cent for research and planning.

The panel was moderated by Douglas Haskell, editorial director of *Architectural Forum* and *House and Home*. Architect members of the panel were Robert Alexander, George Vernon Russell, Victor Gruen, William Kobluk, Charles Luckman and Edward Fickett. Client members were Milton Brock, tract developer; Jack Hicklin, First National Bank, San Diego; J. K. Hull, president, Lockheed Services Company; John J. Pike, Republic Supply Company; David Slipher, Fritz Burns and Associates; Charles Wellman, Glendale Savings and Loan Association. Garrett Eckbo represented the landscape architecture profession; Stephenson Barnes, the structural engineers, and Paul Lowry, the interior decorators.

Ketchum Inc., A.I.A. public relations counsel, has been divided into ten major sections: Policy and Public Relations, Community Relations, Client Relations, Publicity, Press (newspapers), Magazines (popular and professional), Radio, Television, The Speech, and Advertising. It has been set up in looseleaf form so that more material can be added later; the present edition contains what is described as the "basic" material.

A good deal of the content may appear elementary to members of an A.I.A. chapter which has had a strong public relations program for several years; or to members of large firms which have elaborate public relations setups of their own. But for the great majority of A.I.A. members who belong in neither category, the handbook should offer both immediately applicable ideas or reminders and a useful source of reference.

(More news on page 15)

THE RECORD REPORTS: MEETINGS AND MISCELLANY

Gold Medal Competition

ARCHITECTS, landscape architects, engineers and artists throughout the United States are invited to submit entries for the Architectural League of New York's 1954 Gold Medal Exhibition of architecture, mural decoration, sculpture, design and craftsmanship in native industrial arts, landscape architecture and engineering. Gold and Silver Medals are offered in each category. Preliminary submissions are due December 31; exhibitors selected will then be asked to prepare displays for the competitive exhibit February 23-March 27. Entry blanks, which must accompany preliminary submissions, and a circular of information are available from the League, 115 East 40th Street, New York 16, New York.

What about the GM Fire?

THE FIRE PROTECTION WEAKNESSES that contributed to the destruction of the huge General Motors transmission plant at Livonia, Mich., in a \$50 million fire last August are well known: "the same old 'debbils' of fire safety," according to Chester I. Babcock, manager of the fire record department of the National Fire Protection Association. Addressing a regional conference of N.F.P.A. at Providence, R. I., Mr. Babcock enumerated principal fire protection weaknesses that combined to cause the GM fire and gave examples of the same weaknesses in

large-loss industrial fires of last year: *failure to subdivide excessive fire areas; partial sprinkler protection—less than 20 per cent in the GM plant; incomplete protection of dip tanks containing flammable liquids*—the GM fire started in an unprotected drip pan; *steel construction without fire-resistive protection; use of an oxy-acetylene torch under unsafe conditions; lack of a properly-trained industrial fire brigade; delayed fire department notification.* Mr. Babcock said the General Motors fire should be viewed as "conclusive evidence that the N.F.P.A. and all others schooled in fire behavior and its control have not to date presented a convincing case for fire protection to those in industry in a position to put sound fire protection engineering principles into action."

Birthday

IN DETROIT this month, one of the nation's oldest and largest architectural-engineering firms will be celebrating its 50th anniversary. Smith, Hinchman & Grylls has designed and engineered buildings in Canada, South America, Europe and the Orient as well as the United States, and its projects have covered a wide range of types—including hospitals, aircraft test cells, penal institutions, public housing and factories among others. The firm was associated with Eero Saarinen & Associates, Architects, on the General Motors Technical



Emery Roth & Sons are architects for New York's second aluminum-faced office building—a 22-story structure for Tishman Realty & Construction Company to be erected at 460 Park Avenue, northwest corner of 57th Street. It will be known as the Davies Building. Emery Roth & Sons were also architects of 99 Park Avenue, New York's first aluminum-faced building (ARCHITECTURAL RECORD, Oct. 1953, pages 336, 338), and the RECORD inadvertently contributed to the literature of "Architects Anonymous" by omitting to say so. Sackcloth and ashes for the editor responsible

Center, which won one of two Honor Awards in architecture at this year's national convention of the A.I.A.

"Business Woman of the Year"

MISS JUNE WICKER, 37-year-old Atlanta, Ga., architect, has received the first annual "Business Woman of the Year" award of the American Business Women's Association. Miss Wicker, a 1940 architecture graduate of Oklahoma A&M, spent the war years doing architectural work for the Army Engineers and worked for several Atlanta architects before opening her own office three years ago.

School Awards Offered

AN ARCHITECTURAL EXHIBIT OF SCHOOLS and awards for outstanding school projects will again be features of the national convention of the American Association of School Administrators at Atlantic City, scheduled for February 13-18. The exhibition is open to all registered architects. Complete information and entry blanks, which must be returned by January 11, can be obtained from Dr. Shirley Cooper, A.A.S.A., 1201 16th Street N.W., Washington 6, D. C.



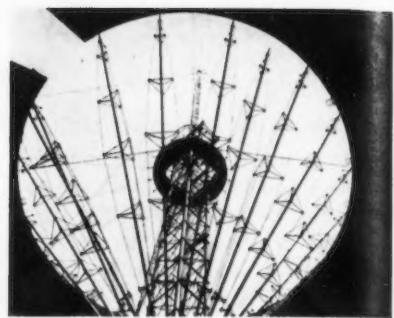
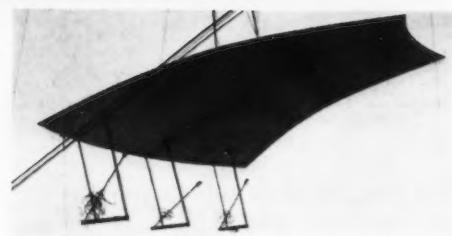
—Drawn for the RECORD by Alan Dunn

THE RECORD REPORTS

(Continued from page 15)

For the Central City

MORE VERTICAL GROWTH and greater centralization were among the prescriptions for New York City's congestion problems produced at a recent meeting of realty investors who own, or control, nearly \$500 million in New York properties. The press was invited to a luncheon given by Col. Henry Crown, chairman of the Empire State Building Corporation, and Roger L. Stevens, Arnold M. Grant and William J. Keary, members of the Empire State Building Executives Committee, for William Zeckendorf, president of Webb and Knapp, who headed the group which recently purchased the Chrysler, Chrysler East and Graybar buildings, and attended also by Walter P. Chrysler, Jr., Lester Abberley and H. Hamilton Webber. New York's ills were diagnosed as "suburbanitis" and the realtors agreed on nine major points as "central to a program of preventive medicine for cities in general, and New York in particular." In addition to the one already mentioned, the points were: naming of a long range planning commission; development of mechanical parking, redevelopment and expansion of rapid transit systems; major concepts of



The largest structure of its kind in the world—225 ft in diameter and higher than an 18 story building—has been completed at the West Milton, New York, site of General Electric Company's Knolls Atomic Power Laboratory, to house a prototype atomic power plant for submarines to be tested by GE. A total of 682 steel plates (top) were welded together to make the sphere, which, with the steel columns that support it, weighs 3850 tons. Above: steel tower and booms used in erecting structure, a Chicago Bridge and Iron Company job that took 10 months

redevelopment; a far greater use of condemnation powers by the city; a greater degree of cooperation among "civic thinkers," architects and real estate economists; a city wage tax, "to assign a fair share of the cost of the city's facilities to those who use them"; stronger laws for involuntary incorporation—"those suburbs which are economically part of New York City but which 'freeload' upon it should be annexed willy-nilly."

To Meet a Challenge

SPECIAL MILLWORK MANUFACTURERS of the United States and Canada—some 150 of them—held their first national convention in Chicago October 15-16 and organized the Architectural Woodwork Institute of America as a means of helping meet "the competitive challenge of rival building materials such as steel, aluminum and plastics." Charles A. Rinehimer of Rinehimer Bros. Manufacturing Company, Elgin, Ill., was elected first president of the Institute, which has established headquarters at 332 South Michigan Avenue, Chicago 4, Ill.

Plastering's "Better Deal"

CONTRACTORS AND LABOR UNIONS in the lathing and plastering industries have united to form a National Bureau for Lathing and Plastering designed to "give new home builders an all-round better deal" by improving practice, performance and quality within the lathing and plastering industries. A five-point "Standards of Performance" agreement between contractors and unions announced at a Chicago meeting of the new Bureau provides that: (1)



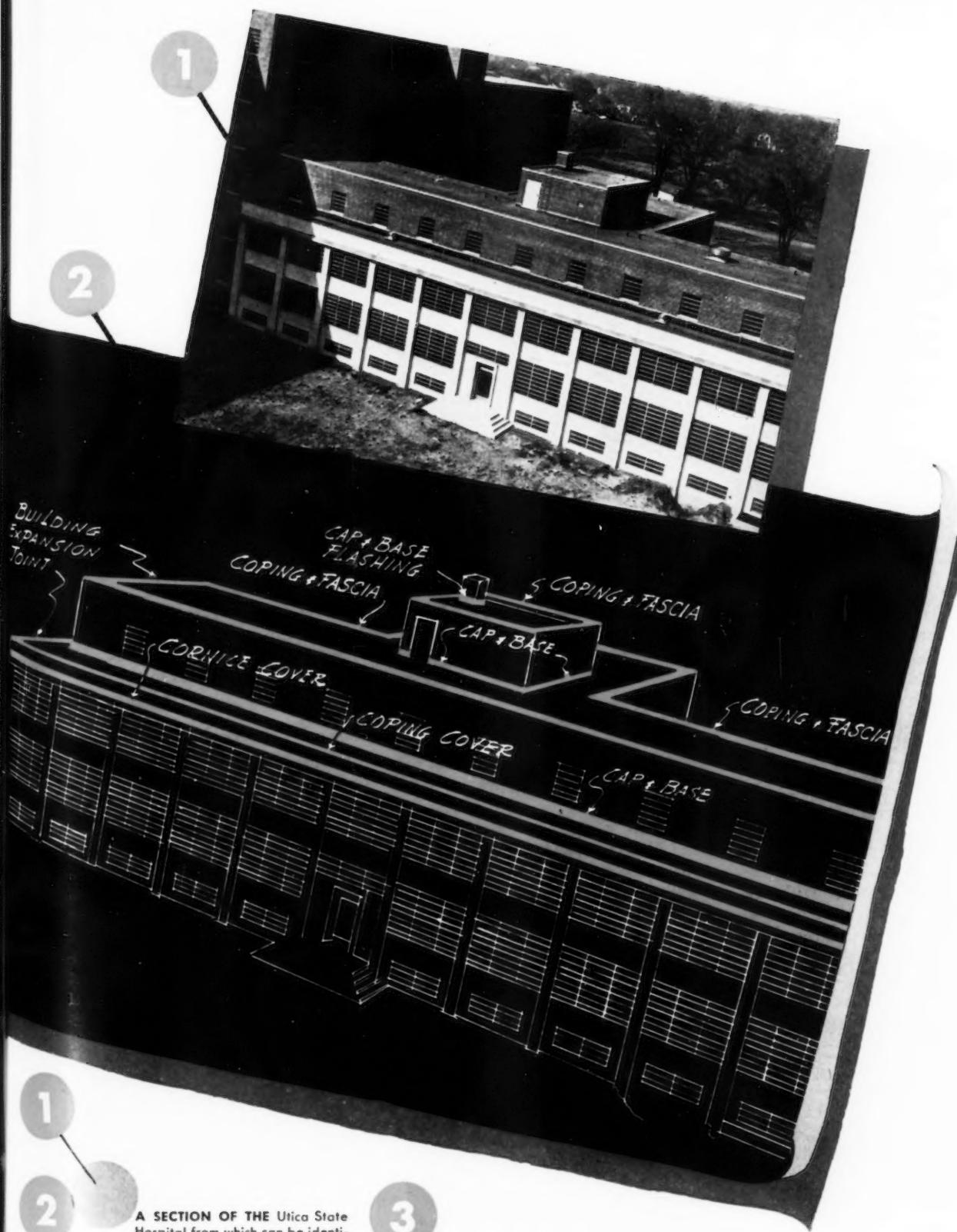
"BUILDERS"—1950 canvas (10 ft high) by Fernand Léger, one of the "great moderns" who, as Pietro Belluschi noted in his A.I.A. convention address last June, "have deeply affected our architecture in many unexpected ways." The first comprehensive exhibition of Léger's work of nearly 50 years was organized this year by the Art Institute of Chicago, the San Francisco Museum of Art and New York's Museum of Modern Art. It is now on view in New York till January 3 after earlier showings in Chicago and San Francisco

materials and workmanship shall comply with nationally recognized standards; (2) costs shall be more competitive with other materials and contractors will charge only a reasonable profit, mechanics will work on a straight hourly pay basis, without bonus payments, and such practices as limitation of the mechanics' daily production and piece-work will be eliminated; (3) contractors and labor will agree on reasonable time schedules for completion of work and local chapters of the Bureau will adopt apprentice training programs and increase the number of apprentices; (4) schedules and completed work of other trades must be respected and materials and equipment must be handled to assure normal progress of each project; (5) lathing and plastering must be kept attuned to an ever-changing construction industry—local chapters must cooperate in developing and using new materials, techniques and equipment.

Antidote for Winter Doldrums

FOR A CAREFREE INTERLUDE between the Scylla and Charybdis of Christmas bills and income tax returns, some lucky architects will be making the "Architects' Trek 'Round South America" which has been "specially arranged for members and families of the American Institute of Architects" by the United States Travel Agency Inc., managers of some memorable earlier A.I.A. "treks"—to Mexico, Cuba, Europe et al. The 32-day plane tour January 19-February 20 will take the trekkers to Panama, Peru, Chile, Argentina, Uruguay and Brazil, with local architects alerted for their arrival all along the way. Trip leader will be Harold R. Sleeper, F.A.I.A., of New York.

(More news on page 29)



1

2

A SECTION OF THE Utica State Hospital from which can be identified in drawing below, the many vital spots where Revere Copper is used.

60,000 LBS. of 16 oz. Revere Lead Coated Copper and 16, 20 and 32 oz. Soft and Cold Rolled Revere Plain Copper were used on this Medical and Surgical Building.

3

THE FLAT SEAM ROOFS over the canopies are also of non-rusting, enduring Revere Copper.

NEW BOSS OF MILITARY BUILDING TALKS ABOUT HIS JOB

Admiral Jelley Seeks "Criteria of Need" as a First Step — On Design and Construction Standards, His Mind is "Open"

BY ERNEST MICHEL

REAR ADMIRAL JOSEPH F. JELLEY JR., in his new job as Director of Construction for the Department of Defense, is attempting to work out a less complex approach to the problems of armed services building and hopes in the process to save the Federal government a lot of money.

His first step in the new office is to develop criteria of need. By learning more exactly what Army, Air Force and Navy must have in the way of air fields, housing, warehousing and other structures, whole buildings can be eliminated at the planning level, in his opinion. Regarding warehousing, for example, the Air Force and Army have customarily based their needs on immediate supply load, he explained. This provides adequate space for present operations, but if the building is to be a permanent one, say with a 50-year life, "we should find another criteria" on which to compute the requirement.

BIGGEST SAVINGS: Maintenance

While this one approach alone will lead to substantial savings over the years, Admiral Jelley believes that the largest cost-cutting will occur in expenditures for maintenance. With the new construction program falling off, the saving will be minimized compared with the job that can be done on spending for maintenance and repair. The maintenance and repair program, however, will fall in a different operation — under a Director of Maintenance, an appointment yet to be made by Assistant Secretary of Defense Franklin G. Floete at this writing. A third directorship under Secretary Floete is that of Real Property Management, already filled by Ira D. Beynon, a Lincoln, Neb., attorney.

Who Does What

To Admiral Jelley falls the duty of administering new construction with appropriated funds and of handling the very important design and construction standards. The Director of Maintenance — operating in a new field as far as segregation from the other functions is concerned — will have under his wing the huge repair and renovation programs

of the three services which are more constant and fixed. Director Beynon gets into rehabilitation, handles leased-out properties and is responsible for administration of the existing plant, most of which (including housing) will be under his guidance for property handling purposes.

Each of these divisions has its own functions outlined by the Assistant Secretary, yet they work closely with each other in supervising the sprawling physical facilities of the Defense Department.

"Must Not 'Freeze' Design"

On the question of design and construction standards, Admiral Jelley says he has an open mind.

Coming to his new post from a broad experience in Navy's Bureau of Yards and Docks since World War II, he holds these basic concepts on the subject: you should not standardize on types of buildings, but just on size; you must be careful how you standardize for you must not "freeze" design; you must be careful not to tie the local man down with fixed criteria. In short, it is the Director's belief that the answer to the question of how far mandatory design and construction standards should go lies somewhere midway between the two extremes of rigidly fixed standards for all construction operations, and no standards at all.

Recalling World War II and later

operations, Admiral Jelley remarked, "We'd never have gotten into the fields of fixed slab, tilt-up, or pre-stressed concrete if our standards hadn't been flexible."

To Seek Service Support

One gets the impression in talking with the former BuDocks chief that there will be no attempt to cram any set standards down the throats of the services. His office will continue with the planning standards worked on by his predecessor, Frank R. Creedon, Director of Installations until this fall. But when these are finally formulated in another five months (Admiral Jelley's estimate as to timing), Admiral Jelley believes architects and engineers can count on their being flexible and pretty well accepted by the services that have to use them. "We'll standardize with the support of the services," is the way the new Director put it. There will be no hesitation in carrying important disputes on standards issues to the Secretary of Defense.

Three Work Sections Set Up

As Admiral Jelley has organized his shop, the Technical Section deals with functional criteria such as determining volume of building required and project scheduling. Design and Construction Standards, as part of this operation, works out the flexible design criteria, constantly looking for areas where money can be saved. An example of the larger savings is the switch from two- to three-story barracks, a move that cut from 20 to 25 per cent from the cost of erecting military housing. This is, in-

(Continued on page 274)



The Defense Department's new Director of Construction comes to his job from the Navy's Bureau of Yards and Docks, where he had served since World War II. Admiral Jelley was deputy director of BuDocks' construction department during the war, its chief since 1949

Auto Assembly Plant Equipped with a

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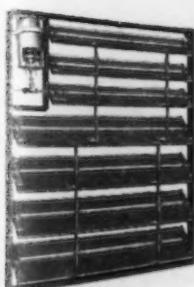
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MEETING HELD IN OTTAWA ON BUILDING RESEARCH

CANADA'S first full-scale Conference on Building Research was held in October in the Sussex Street building of the National Research Council in Ottawa. The meeting was sponsored by N.R.C.'s Division of Building Research. The sessions included two seminars, one on building science, the other on housing research.

The building science seminar dealt with such topics as changes in concrete due to moisture, moisture content and capillary potential relationships, measurement of moisture content, moisture movement in unsaturated soils, potentials in moisture migration, and D.B.R. experiments in moisture migration due to a temperature gradient.

The housing research seminar included treatment of housing research in the United States, housing research and the National Association of Home

Builders, housing research work of the Small Homes Council, housing research in Canada, technical aspects of Canadian housing research, and a study of basementless house construction in Canada.

D.B.R. Opens New Laboratory

The Division of Building Research recently opened in Ottawa a new laboratory which the director of D.B.R., Robert F. Legget, calls "the most economical building of its type ever put up in Ottawa." Total cost of the one million cu ft building was \$1,174,000; without laboratory equipment; the per cu ft cost was \$1.35.

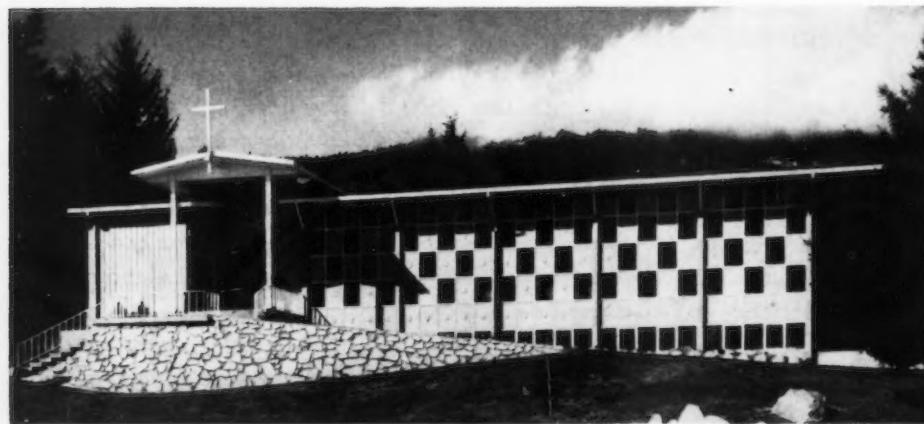
The Division, which has for the first six years of its existence utilized 10 separate buildings to house its staff of 125, believes its new building may be the first in the world designed exclusively for building research. The Divi-

sion's major efforts have been focused on revision of the National Building Code; the new edition is expected to be ready for release next spring and will be available to all cities wishing to adopt it.

HOTEL TO BE FIRST UNIT OF CENTER IN MONTREAL

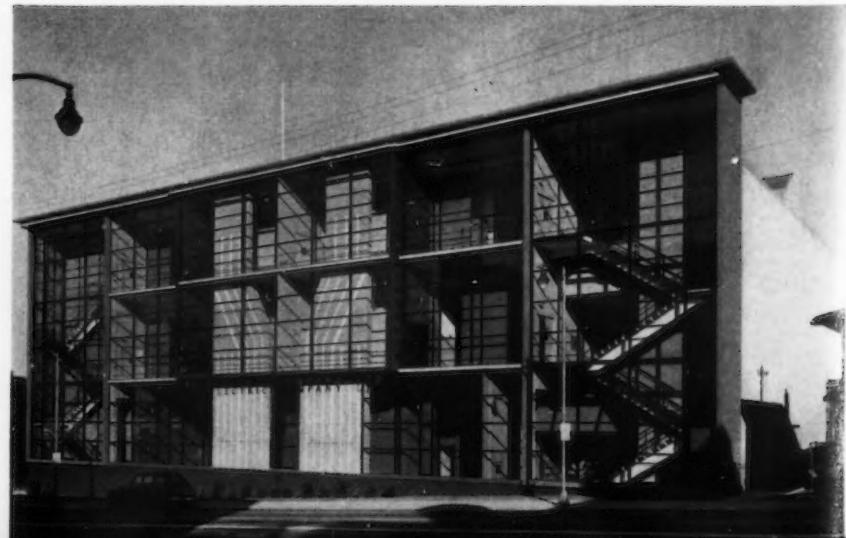
A \$20 million hotel, planned as the first unit of the projected Montreal Center, may be started next year, according to an announcement by Donald Gordon, president of Canadian National Railways. The center, designed to create a modern transportation, hotel, business and shopping center in downtown Montreal, will be erected jointly by C.N.R. and private enterprise.

(Continued on page 26)



Panels of plywood were used to achieve the decorative checkerboard effect in St. Anthony's Church recently completed at West Vancouver. B. C. Gardiner & Thornton were the architects.

The British Columbia Electric Company invites sidewalk supervision of the operations at the new Dal Grauer Substation in Vancouver. The building's glass front will, the company hopes, encourage members of the public to take a good look at the equipment which is housed in the \$3 million structure. Passers-by are further enticed to stop and look by the use of planes of color on walls, stairways and equipment. Architects for the building were the Vancouver firm of Sharp & Thompson, Berwick & Pratt



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ARCHITECTURAL FILE
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Pella Wood Multi-Purpose Windows shown here adapted to the famous "Trade Secrets House" which was designed by a panel of leading architects, builders and designers.

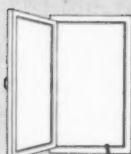
AWNING WINDOWS

"HOPPER VENTS"

CASEMENTS

PICTURE WINDOWS

PLAN WITH *Pella* PRODUCTS MADE BY ROLSCREEN COMPANY, PELLA, IOWA



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ROLSCREENS



Pella
LITE-PROOF SHADES



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Pella
VENETIAN BLINDS

THE RECORD REPORTS

CANADA

(Continued from page 24)

Provision for construction of the 1000-room hotel will be included in C.N.R.'s 1954 budget, subject to parliamentary approval. Erection of the hotel will be followed by that of an adjoining C.N.R. central office building. Private business would then be encouraged to



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THEY PAY FOR THEMSELVES

Believed to be the first structure in the world designed specifically for research into building, the new Building Research Center of the National Research Council was opened on October 23 in Ottawa. J. C. Meadowcroft was the architect; consulting engineers were Keith and Associates

join in the project by erecting buildings across Dorchester Street from C.N.R.'s existing Central Station and International Aviation Building and the projected hotel and C.N.R. office building. Modern office and commercial buildings would be erected on either side of a plaza. C.N.R. planners would build above a present area of railway tracks.

COMMITTEE DRAFTS BILL TO AMEND HOUSING ACT

A joint committee, composed of representatives of the Canadian Bankers Association, the Dominion Mortgage & Investments Association, Central Mortgage & Housing Corporation, and the Department of Finance, has prepared a draft bill covering proposed amendments to the National Housing Act. The bill will be submitted to Parliament at its current session. The Bank Act also requires amendment if Canadian banks are to be permitted to make mortgage loans.

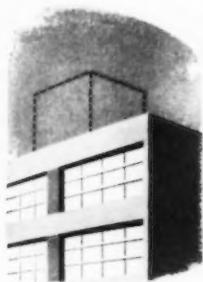
The purpose of the legislation is to increase the supply of investment funds for home financing. Formerly most of the money came from life insurance companies, but this source has proven inadequate for current needs. Production, which should have been running at about 125,000 units per year in order to keep pace with population growth and to catch up with the housing backlog, has been lagging at 80,000 to 90,000 units per year.

David B. Mansur, president of Central Mortgage & Housing Corporation,

(Continued on page 30)

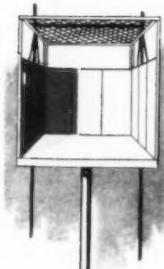
economy in freight elevators

Rotary Oildraulic Elevators have these architectural and operating advantages



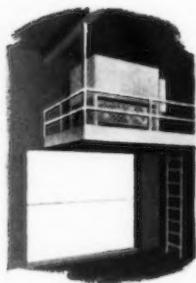
No costly, unsightly penthouse

Because it's pushed up from below, not pulled from above, the Oildraulic Elevator requires no unsightly penthouse. This permits a saving of several hundred to thousands of dollars, and improves the design of a building.



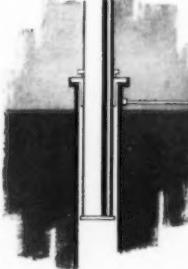
Lighter shaftway structure

There's no need for heavy, load-bearing sidewall supporting columns and footings to carry the car, counterweight, overhead machinery, and the load. Rotary's Oildraulic jack supports the entire system from below.



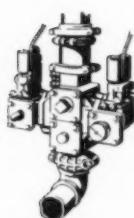
Flexibility in power unit location

A machine room can usually be dispensed with because Rotary's compact power unit can be located at any convenient spot on any landing and on any side of the hatchway . . . or in an area with other equipment.



Low operating and maintenance cost

As the pump, all valves and the plunger operate in oil at all times, wear is negligible. Motor is used only when car rises—half the usual service. Smooth operation reduces shock and wear. No cables to replace periodically.



**New Rotary
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PATENTED OILDRAULIC CONTROLLER guarantees smooth starts, accurate landings

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handles the functions of seven separate control valves . . . simplifies adjustments and maintenance.

Rotary electric control systems are tailored to exact requirements and any desired type of operation can be furnished. For planning assistance call on our Engineering Department.



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CANADA

(Continued from page 26)

in a recent address before the Canadian Association of Real Estate Boards, blamed the shortage on heavy spending for bonds, consumer goods and new industrial expansion. He said that last year, out of every housing construction dollar spent, owners raised 56



designed with SCHOOL CLASSROOM IN MIND!

HAWS Sink-Type Drinking Faucet Receptor

School classrooms may differ widely in their requirements. Realizing this, the new HAWS Sink-Type VANDAL PROOF Drinking Faucet Receptor was designed to accept practically any combination of HAWS Pantry Faucets—or Fill Glass Faucets—and HAWS bubbler-type Drinking Fountains.

• The HAWS Receptor is cast iron—beautifully finished in acid resisting white enamel. Stainless steel mounting rim prevents water running onto table or cabinet top and affords a water tight bond between sink and top surface.

Write today for brochure illustrating combinations of HAWS fixtures that may be utilized with Receptor. You'll find a combination to fit the school job you have on the board or are now planning!

HAWS DRINKING FAUCET CO.

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St. Joseph's Hospital, Toronto, has recently added this frankly contemporary nurses' residence to its old building. Architects were the Toronto firm of Brennan & Whale

cents, the government raised 15 cents and mortgage lenders raised 29 cents. Mr. Mansur also said that there had been stability in this pattern of lending during the last three years, but "at present loan levels and rates of mortgage interest the available equity money in Canada could absorb substantially more mortgage money than is forthcoming."

The availability of mortgage money by lending institutions, Mr. Mansur continued, depends in the long run on year-to-year access of cash and the non-mortgage demands that must be met out of this cash. "These demands depend largely on the requirements of the country's economy such as municipal services, industrial plants, schools, hydro development and like projects.

"While many housing enthusiasts will insist that there is too little mortgage money, fewer will accept the equally valid claim that there is too much bond money, or too high a level of consumer expenditure."

AWARDS TO BE PRESENTED FOR ENGINEERING THESES

The Canadian Construction Association has announced that it will again award prizes for the best theses on construction subjects prepared by senior engineering students at Canadian universities. Terms of the competition are as follows:

(1) Theses prepared in conjunction with normal graduation requirements are eligible for entry in the competition. Preference will be given to those dealing

(Continued on page 32)



WINDOWS that NEVER NEED PAINTING

SAVE MONEY YEAR AFTER YEAR

Clinton Memorial Hospital
Wilmington, Ohio
Architect: Marley W. Lethly
Contractor: Sever Williams

Every dollar saved on maintenance expense is a dollar that can be used for more important things, such as new equipment, salaries, and dozens of other items. That's why today, more and more hospital management boards are insisting on "Quality-Approved" aluminum windows for all new hospital buildings.

"Quality-Approved" aluminum windows help reduce annual operating budgets — save important maintenance dollars year after year. They cannot rust or rot — never need painting or costly repairs. They always operate without trouble and remain beautiful for the life of the building.

"Quality-Approved" aluminum windows are available through many manufacturers in sizes and styles (double-hung, casement, projected and awning) to fit any design treatment. Only those that carry the "Quality-Approved" Seal have been tested by the Pittsburgh Testing Laboratory and approved for quality of materials, construction, strength of sections, and minimum air infiltration.

For copy of window specifications book and names of approved manufacturers, see Sweet's (16a/ALU) or write to Dept. AR-12.

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ALUMINUM WINDOWS

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The Architect's Question Box



Published now and then in
the interests of wood finishing,
by FIRZITE® and SATINLAC®, those
two little **WIZARDS WITH WOOD.**

QUESTION: How can I get a light natural finish on Knotty Pine?

ANSWER: Apply a coat of SATINLAC: steel wool when dry. Apply second coat of SATINLAC: when dry steel wool and then wax. The same procedure can be followed on most hardwoods and softwoods, including Korina, Walnut, Oak, Vertical Grain Cedar, Mahogany, Unselected Birch, American Elm, etc., etc.



QUESTION: On woods like Walnut and Mahogany where oil-type finishes such as varnish turn the woods several shades darker is there any finish I can use to avoid this dark coloration?

ANSWER: SATINLAC has been developed to meet the demand for a light natural finish on all woods. It produces a finish on dark woods like Mahogany and Walnut that is shades lighter than oil base finishes.



QUESTION: How can we prevent too high a sheen when waxing a wood surface?

ANSWER: If the paste wax is rubbed shortly after application the result will be a soft sheen. The longer the wax sets before rubbing the higher the resultant gloss.



QUESTION: How can I get a Colonial or Cape Cod effect on Knotty Pine?

ANSWER: Apply one coat of tinted Clear FIRZITE to obtain the Cape Cod effect. SATINLAC should then be used for the finish coats. For full information on this finish write us.

*If you have any other problems on wood finishing
let us help you. Write also for specifications.*

May we send you a blond Birch panel showing SATINLAC finish?

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THE RECORD REPORTS

CANADA

(Continued from page 30)

ing with job-site construction problems. (2) A \$50 cash prize and an engineer's handbook will be presented to a student at each Canadian university offering degree courses in engineering. The selection of the prize-winning thesis will be made by the Dean of Engineering. (3) Prize-winning theses will be reviewed by the C.C.A. Practical Research Committee, and a special \$100 prize will be awarded if, in the Committee's opinion, a thesis of outstanding merit is received. (4) The above awards will be made during the spring or early summer of 1954.

Further information about the competition may be obtained from S. D. C. Chutter, Acting Manager, Canadian Construction Association, 384 Bank St., Ottawa 4, Ont.

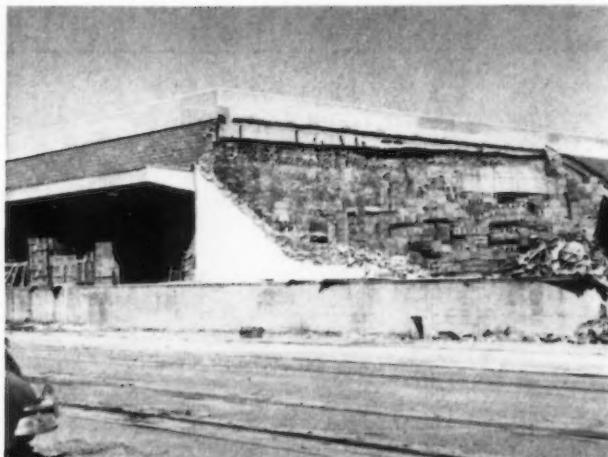


Ridley College's new infirmary was designed by Marani & Morris to harmonize with the school's traditional Georgian architecture. The school is located in St. Catharines, Ont.





FRONT VIEW OF BUILDINGS IN 400 BLOCK ON FRANKLIN STREET shows the terrible toll the tornado took of buildings whose frame construction was less rigid than reinforced concrete. This is typical of the fate of the load-bearing wall-type structures in the twister's path!



DRAMATIC ILLUSTRATION OF THE ABILITY OF REINFORCED CONCRETE TO WITHSTAND THE TWISTER is the Waples Platter Co. building. At right is all that remains of the brick portion of warehouse, but reinforced concrete section, left, is structurally unaffected by the storm.

Texas tornado traces path of ruin... reinforced concrete structures still stand!

What an attempt to "economize" with structural frames less rigid than reinforced concrete meant in loss of life and property in Waco is obvious from photographs of the tragedy. In the large, these buildings were leveled!

In contrast, here is the engineering report on reinforced concrete framed buildings in the storm's center: Roosevelt Hotel—12-story r/c frame bldg., no structural damage; Behrens Drug Co.—4-story r/c frame bldg., no structural damage; Southwestern Drug Corp.—4-story r/c frame bldg., no structural damage; Professional Bldg.—10-story r/c frame bldg., no structural damage; Frank Latham Co.—r/c frame bldg.,

no structural damage; Southwest Coffee and Spice, Ltd.—2-story r/c section, no structural damage; Youngblood's General Office Bldg.—no structural damage to r/c section; Waples Platter Co.—1-story bldg., no structural damage to r/c section; City Hall—r/c bldg., no structural damage; Allen Miller—partially r/c bldg., no damage to r/c columns and beams.

If all of the downtown Waco buildings had been of reinforced concrete... how changed the picture would have been!

CONCRETE REINFORCING STEEL INSTITUTE
38 South Dearborn Street
Chicago 3, Illinois

THESE REINFORCED CONCRETE BUILDINGS SUFFERED NO STRUCTURAL DAMAGE Behrens Drug Co. Bldg., Southwest Coffee & Spice Bldg., and Professional Bldg. (left to right) successfully rode out the storm!



THE FIRST FULL-SCALE ATOMIC POWER PLANT in the United States will be built for the Atomic Energy Commission by Westinghouse Electric Corporation at Oak Ridge, Tenn., Paducah, Ky., or Portsmouth, Ohio, atomic installations sites, may be "in good operation" in three or four years. AEC Commissioner Thomas E. Murray, announcing the program October 22 in Chicago, said the project inherits its design from "a navy

project" and noted proposals for "dual-purpose" reactors — to produce plutonium for military use as well as power for industrial use — had been sidelined for the present because existing facilities are adequate for foreseeable government plutonium requirements.

THE NEW HOUSING PROGRAM, "to be sound and progressive," must be carried out largely by private enterprise with the

government confining itself mostly to assistance and encouragement to private industry, Housing Administrator Albert M. Cole told the annual convention of the Mortgage Bankers Association of America at Miami Beach. In Washington, subcommittees of the President's Committee on Housing Policies and Programs, of which Mr. Cole is chairman, were continuing to receive testimony — frequently, of course, in conflict — of various interested groups and preparing for early-December sessions of the full committee to draft final recommendations to the President as the basis for new housing legislation to be submitted to the next session of the Congress.

PRELIMINARY PLANNING WORK on four major air bases in Spain to be used jointly by the U. S. and Spanish air forces is under way. Representatives of Pereira & Luckman of Los Angeles, Metcalf & Eddy of Boston, F. R. Harris of New York, and Shaw, Metz & Dolio of Chicago, architect-engineers for the base program, accompanied Air Force Secretary Harold F. Talbott on a recent tour of the sites. Applicants for field positions on the Spanish base project have been advised to address queries to: Chief, Bureau of Yards and Docks, U. S. Navy, Washington 25, D. C.

MORE EMPHASIS ON BUILDING RESEARCH is needed in the Building Technology Division of the Bureau of Standards, according to the recent report on the Bureau by the special evaluating committee of leading scientists from outside government set up last spring to study the Bureau's operation.

LARGE-SCALE PUBLIC WORKS are being planned as one of the counter-measures to depression if it comes, Dr. Arthur F. Burns, chairman of the President's Council of Economic Advisers, told the American Assembly Conference on Economic Security at Arden House, Harriman, N. Y., last month.

DR. SAMUEL MILLER BROWNELL, president of the State Teachers College at New Haven, Conn., and professor of educational administration at the Yale Graduate School, was named by President Eisenhower as the 13th U. S. Commissioner of Education. Doctor Brownell is a brother of Attorney General Herbert Brownell.

(Continued on page 38)

Fairhurst offer a Modern Approach
to Religious Architecture . . .

T.M. Reg.



TEMPLE ISAIAH
Forest Hills, N. Y.

Architect: Schuman
& Lichtenstein, N. Y.

**2 Fairhurst Unitslide Walls
permit maximum use of
space areas in this up-to-
date community center**

Top: one wall, closed. Right: shows walls, units partly opened. Bottom: Head-on view shows one wall in place, other folded into pocket. Walls consist of 6 units, each 6' wide, 15' high, faced with Honduras Mahogany and Walnut.

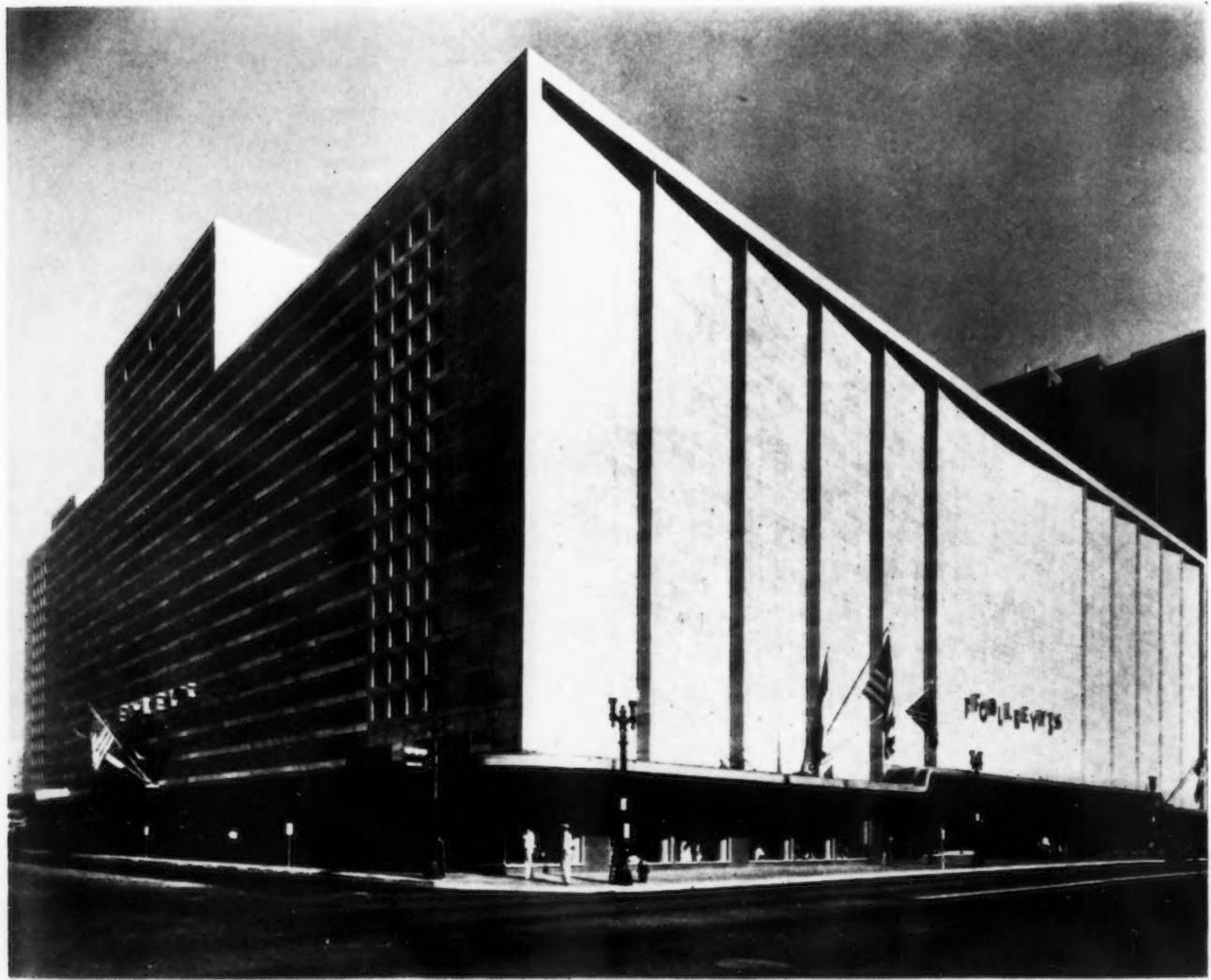


To serve a large suburban community within a few miles of New York City, Temple Isaiah maintains a full calendar of activities for all ages and interests, day and night, throughout the week. Large and modern as it is, the Temple required utmost flexibility of space to meet these heavy demands. To solve the problem, two Fairhurst Unitslide Folding Walls were installed—one on each side of the entrance corridor. This permits four different arrangements of auditorium space. Other advantages: smooth, quick operation of the walls; solid, rigid structure; high sound retardance permitting meetings to be conducted simultaneously in adjoining rooms with full privacy; striking beauty of finish. We offer a generation of specialized knowledge in folding wall construction.

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HOUSING POLICY GROUP GETS NUMEROUS VIEWS

The very important early December meeting of the President's Advisory Committee on Housing Policies and Programs was faced with a plethora of suggestions for overturning the placid routine of the Housing and Home Finance Agency. Each of the myriad organizations that had reported to the com-

mittee, either directly or through its Eisenhower-appointed chairman, Housing Administrator Albert M. Cole, had put forward its individual proposals for correcting the housing ills, whatever they might be.

And whatever the outcome of the committee's recommendations to the White House, financing seemed to be of deepest concern to the greatest number presenting their solutions.

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TO ANY BUILDING**



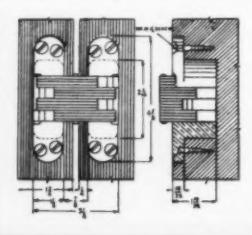
Solar-Space House—Equipped with Invisible Soss Hinges
Architect—David Baker—Washington, D. C.

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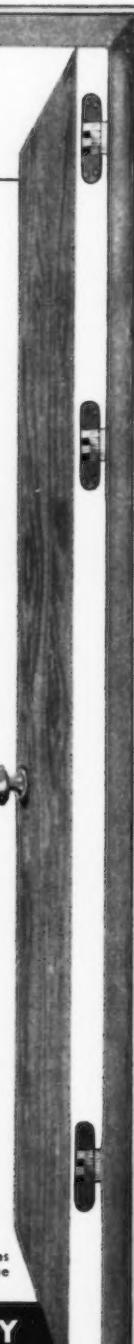
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The National Association of Home Builders, while pleading for retention and strengthening of the vast Federal financing plans, stood almost alone in this recommendation at first. Other industry groups had urged that the Federal government be taken out of the housing business altogether.

With mortgage financing long the number one problem of the home builders in many parts of the country, one NAHB official put it this way: "If FHA and VA are done away with and if there is no central mortgage banking facility to serve this industry, housing will be cut back sharply, there will be fewer houses for appraisers to appraise and fewer finished products for real estate men to sell."

There was the rather odd spectacle, too, of the NAHB and the National Association of Housing Officials getting their heads together to formulate joint recommendations in the area of urban redevelopment.

With a NAHO representative alone, a subcommittee of the President's group explored the possibility of localities making a greater contribution than they now are doing toward their own rebuilding. There was agreement that the job of rebuilding America's worn-out city areas is just too vast for the Federal program as it has been constituted.

Committee members found themselves in a position of compromise on several of the controversial issues developed during the months of their study. One of the hottest of these in the fiscal field was the handling of VA-guaranteed loans. There was considerable pressure, developed as the subcommittees undertook their studies, to remove this function from the Veterans Administration and transfer it over to the Federal Housing Administration.

There was a strong faction in the advisory group that wanted to remove the VA-guaranteed operation from Veterans Administration altogether, but a compromise along these lines was the more likely ultimate development: VA would continue to handle the loan program, initiating loans in much the same way as it now does, but FHA would be given the job of processing and handling the compliance problems in connection with them. VA would still receive and pay claims, and FHA would take over the job of inspection of plans and property. The organized veterans groups are strongly opposed to any transfer of function.

The U. S. Chamber of Commerce took
(Continued on page 250)

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*Fiberglas, Sonofaced (Reg. U.S. Pat. Off.) Stria, Sonocor and Noise-Stop are trade-marks of Owens-Corning Fiberglas Corporation.

CONSTRUCTION COST INDEXES

Labor and Materials

United States average 1926-1929 = 100

Presented by Clyde Shute, manager, Statistical and Research Division, F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assocs., Inc.

NEW YORK

Period	Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.		Residential		Apts., Hotels Office Bldgs. Brick and Concr.	Commercial and Factory Bldgs. Brick and Concr.	
	Brick	Frame		Brick	Brick and Steel	Brick	Frame		Brick	Brick and Steel
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1940	126.3	125.1	132.2	135.1	131.4	91.0	89.0	96.9	98.5	97.5
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
1948	250.1	251.6	239.4	242.2	235.6	199.2	202.5	178.8	178.8	178.8
1949	243.7	240.8	242.8	246.4	240.0	189.3	189.9	180.6	180.8	177.5
1950	256.2	254.5	249.5	251.5	248.0	194.3	196.2	185.4	183.7	185.0
1951	273.2	271.3	263.7	265.2	262.2	212.8	214.6	204.2	202.8	205.0
1952	278.2	274.8	271.9	274.9	271.8	218.8	221.0	212.8	210.1	214.3
July 1953	283.6	280.0	282.8	288.3	284.9	226.5	227.8	224.3	226.0	226.0
Aug. 1953	283.1	279.2	283.4	288.7	285.2	225.7	226.6	224.8	226.4	226.2
Sept. 1953	284.7	279.2	288.5	295.3	291.3	225.6	226.5	225.8	226.8	227.0
	% increase over 1939			% increase over 1939			% increase over 1939			
Sept. 1953	130.5	128.1	120.7	121.4	123.9	161.4	172.6	137.4	132.9	139.7

ST. LOUIS

1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.4	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1940	112.6	110.1	119.3	120.3	119.4	106.4	101.2	116.3	120.1	115.5
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6
1951	252.0	248.3	238.5	240.9	239.0	245.2	240.4	239.6	243.1	243.1
1952	259.1	253.2	249.7	255.0	249.6	250.2	245.0	245.6	248.7	249.6
July 1953	264.2	257.0	260.7	269.3	263.2	257.2	250.8	258.3	263.1	261.8
Aug. 1953	264.9	257.5	261.9	271.0	263.9	256.6	249.8	259.0	263.7	262.2
Sept. 1953	266.8	261.0	262.2	270.8	264.0	258.7	251.3	263.8	270.7	266.1
	% increase over 1939			% increase over 1939			% increase over 1939			
Sept. 1953	142.1	143.9	120.9	126.0	121.8	145.0	153.1	124.7	122.1	128.4

The index numbers shown are for combined material and labor costs. The indexes for each separate type of construction relate to the United States average for 1926-29 for that particular type — considered 100.

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110
index for city B = 95
(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

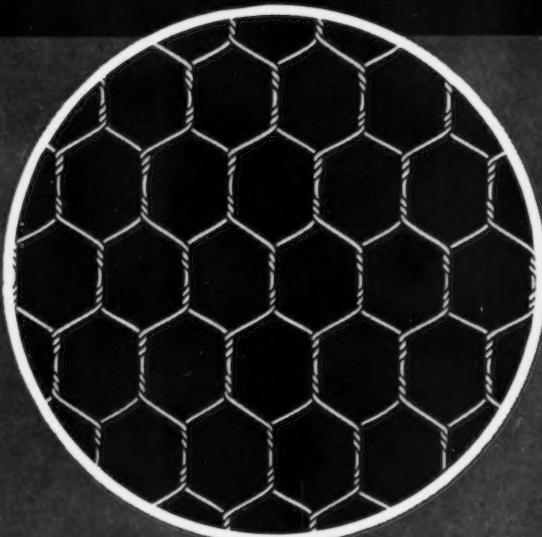
Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

These index numbers will appear regularly on this page.

3 KEYS TO STRONGER PLASTER

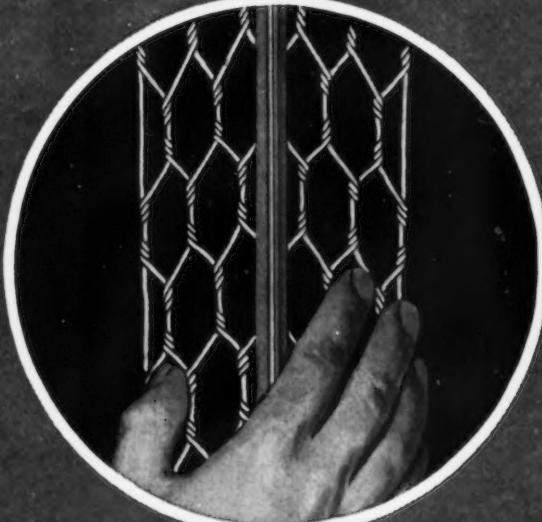
1. KEYMESH

Keystone's woven wire galvanized reinforcing lath—applied directly over the gypsum or insulating lath on the entire ceiling. This network of multidirectional reinforcing increases the strength of ceilings. It assures a uniform thickness of plaster and guards against cracks. Where ceiling radiant heat is installed, Keymesh accelerates uniform heat distribution as well as reinforcing the plaster.



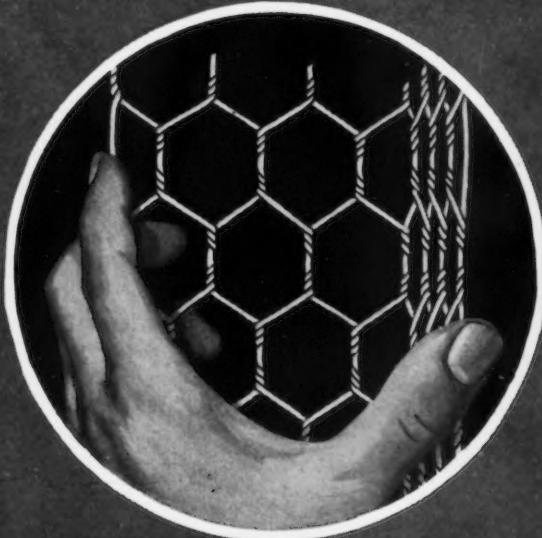
2. KEYBEAD

Keystone's woven wire galvanized reinforcing lath with the precision-formed bead—applied at all outside corners. The open mesh of Keybead wings permits plaster to completely embed the steel wires, adding strength. Full, solid corners result. Keybead is available in standard lengths; is easy to splice when required.



3. KEYCORNER

Keystone's preformed-for-corners, convenient width, woven wire galvanized reinforcing lath—applied at corners, joints and ceiling-wall junctures. It fits snugly in corners when you flex it. It lies flat, too, for stripping wherever required. It has the same multidirectional reinforcing as Keymesh for maximum crack resistance. It doesn't rust . . . and eliminates waste.



REQUIRED READING



In Unity Church, designed to express Unitarianism's unity of all things, the triangulation (aspiration) of the roof expresses "reverence without recourse to the steeple." From "The Future of Architecture" by Frank Lloyd Wright

WRIGHT LECTURES ON ARCHITECTURE

The Future of Architecture. By Frank Lloyd Wright. Horizon Press (220 W. 42nd St., New York, N. Y.) 1953. 8½ by 10½ in. 326 pp., illus.

REVIEWED BY EMERSON GOBLE

THOSE WHO KNOW WRIGHT in his recent era sometimes have trouble remembering how long he has been on his jet-propelled course. It is easy to forget where he started, how many different times he has cut across the sky, or in the instance of this book, what he said along the way. This is not to suggest that he

has zigged and zagged in conflicting courses, but as everybody knows he has had different phases, and the differences are just as apparent in his writings as in his work.

Though the book is entitled, "The Future of Architecture," its real merit is that most of its selections from his writings go back pretty far. Back when his rhetoric, though always picturesque, was less fiery. Even the chapter which gives the book its title is dated 1937, and deals largely with the truly wonderful story of the design and construction of the Imperial Hotel. And who is to say that this story isn't after all closely related to the future of architecture?

In any case, the book is in the main taken up with now-old lectures—the Princeton lectures, 1930; the Chicago Art Museum lectures, 1931; the London lectures, 1939. What is important is that these series are Wright at his rightest. They are coherent and inspiring, also scholarly—he manages to cover quite well the philosophies of ancient architectural cultures in a very short course in history. Incidentally, some fairly recent

references to his sympathy for Mayan forms are thoroughly explained, and this portion of the book alone makes it well worth while.

Perhaps I should add something about the poetic quality of these historical references. For example, he says of the ancient Persians:

"The quality of a man's work was then still his honor. These noble buildings were made of and made for well-made bodies, tall of stature, fine minds. Black heads and deep dark eyes were the perfect complement for this poetic sense of building and the garden, and of blue. So the Persian of old made his god of Beauty and passionately dreamed his life away godward."

This section of the book, dated 1937, also contains this little nugget:

"... we may now see wherein architecture is to be distinguished from mere building. Mere building may not know 'spirit' at all. And it is well to say that the spirit of the thing is the essential life of that thing because it is truth. Such, in the retrospect, is the only life of architecture.

"Architecture is abstract. Abstract form is the pattern of the essential. It is, we may see, spirit in objectified forms. Strictly speaking, abstraction has no reality except as it is embodied in mate-

(Continued on page 48)

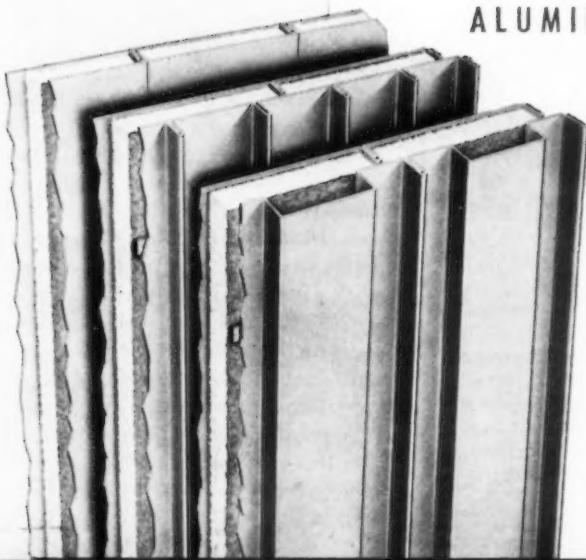


The hands of Frank Lloyd Wright illustrate "tenuity"—a principle of organic architecture. From "The Future of Architecture"

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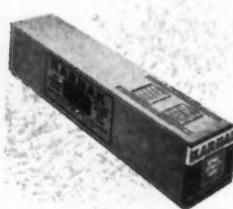
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REQUIRED READING

(Continued from page 46)

rials. Realization of form is always geometrical. That is to say, it is mathematic. We call it pattern. Geometry is the obvious framework upon which nature works to keep her scale in 'designing.' She relates things to each other and to the whole, while meantime she gives to your eye most subtle, mysterious and apparently spontaneous irregularity in effects. So, it is through the embodied abstract that any true architect, or any true artist, must work to put his inspiration into ideas of form in the realm of created things. To arrive at expressive 'form' he, too, must work from within, with the geometry of mathematic pattern. But he so works only as the rug maker weaves the pattern of his rug upon the warp. Music, too, is mathematic. But the mathematician cannot make music for the same reason that no mere builder can make architecture. Music is woven with art, upon this warp that is mathematics. So architecture is woven with a super-sense of building upon this warp that is the science of building. It also is mathematical. But no study of the mathematic can affect it greatly. In architecture, as in life, to separate spirit and matter is to destroy both."

MODERN INTERIOR DESIGN

What Is Modern Interior Design? By Edgar Kaufmann, Jr., The Museum of Modern Art (53rd St., New York, N. Y.) 7 1/2 x 10, 32 pp., illus.

This booklet is intended primarily as a guide for better understanding and appreciation of modern interiors and is written for students and laymen. The material is well organized, the first section explaining the four leading traits of modern interiors; the second stating points of view influential in design development; the last illustrating regional expressions arising from the merging of these two. The illustrations are both interesting and attractive — there is a useful bibliography.

Architects should find this little volume of value both as a sound summing up of principles and conceivably, if handed to them, a means of pointing out to clients the attractiveness and livability of the modern interior's uncluttered spaciousness.

James S. Hornbeck, A.I.A.

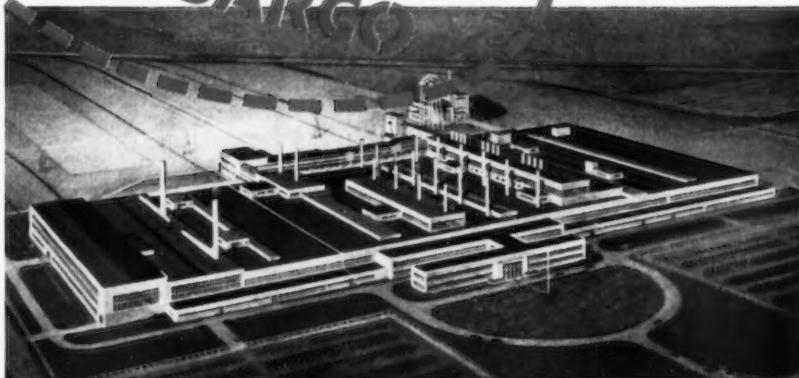
(Continued on page 278)

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DALLAS, TEXAS, *Ford Assembly Plant*
KANSAS CITY, MISSOURI, *Ford Aircraft Plant*
METUCHEN, NEW JERSEY, *Lincoln-Mercury
Assembly Plant*.

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Refrigerated Food Warehousing

by L. R. ST. ONGE, President of V. C. Patterson & Associates, York, Pa.



L. R. ST. ONGE—Since graduating from M. I. T. in 1926, the author has been actively engaged in the refrigeration field. Head of York Corporation's Engineering Dept., for Mid-Atlantic District from 1936-46. Today, Mr. St. Onge is President of V. C. Patterson & Associates, Inc., Consulting Engineers of York, Pa., who specialize in the engineering, design and operation of cold-storage warehouses and frozen-food plants.

METHODS AND CURRENT TRENDS IN FOOD REFRIGERATION

There are two basic methods of food preservation by refrigeration: (1) cooler facilities, which protect fresh foods at temperatures usually above 32°F., and (2) freezers, operating under 32° to prevent spoilage. Until recent years, freezer storage covered almost any temperature below 32°F., but today it is recognized that frozen foods should be kept between 0° and 5°F., with the trend toward temperatures of about -10°F.

The amount of space devoted to freezers has increased rapidly. In 1930, for example, freezers accounted for only 29% of the 310 million cu. ft. of public refrigerated warehouses, while in 1952 they represented 54% of 430 million cu. ft. During the same period, cooler space actually dropped.

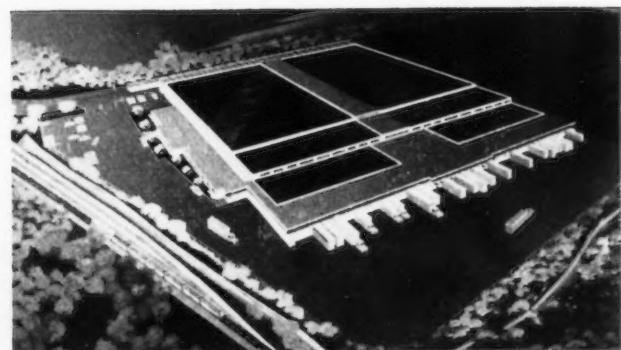
SPECIFIC STORAGE CONDITIONS

Proper temperatures for most foods held in coolers above freezing fall between 32° and 40°F., although some products, such as melons and peppers, require special temperatures (best stored between 40° and 50°). Others, like apples and eggs, must be maintained in temperatures slightly under 32°F. With few exceptions, storage conditions for frozen foods range from 0° to -10°F.

Relative humidity is also very important. The normal range is 75%-85%, but some goods need higher humidities (celery, 95%), while requirements for others fall well below 75%.

REFRIGERATION ON WHEELS

The rapidly expanding consumption of frozen foods has greatly increased the number of processing and freezing plants. The large volume transported in mechanically



Modern freezer warehouse built by Merchant's Terminal Corporation, Baltimore, Md., offers storage facilities of over 2,000,000 cu. ft. . . . has full-length railroad and trucking docks.

refrigerated carriers has made national distribution economical from almost any locality. Volume shipments must be packed and handled quickly, systematically and safely. Storage warehouses are needed at: 1. point of processing; 2. intermediate points for long-term storage; 3. the distributor's warehouse.

Palletized handling of product is another current trend in food warehousing. Some manufacturers palletize at processing, the product remaining in palletized loads until it reaches the distributor storage. Here, it is portioned into commercial and consumer deliveries.

BASIC TYPES OF STORAGES

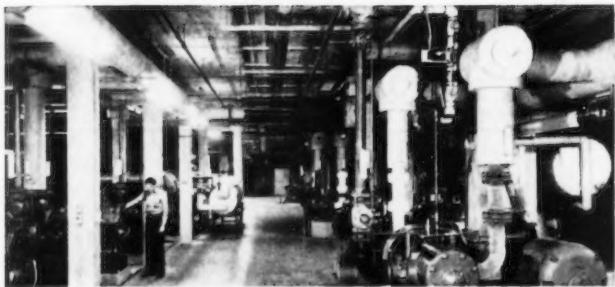
The three types are classified as to functions:

ITEMS	PROCESSING STORAGE	GENERAL OR LONG-TERM STORAGE	DISTRIBUTOR STORAGE
Temperature.....	5°F.	5°F.	0° to 5°F.
Stacking Height.....	14'	17'	12'
Building Construction.....	Semi-permanent	Permanent	Semi-permanent
Trucking Platform.....		Large	
Rail Siding.....	Yes	Large	Yes
Quick-Freezing Facilities.....	—	Yes	No
Multi-Rooms.....	—	Yes	No
Inter-Traffic.....	Important	Important	—
Fire Protection, Mechanical Failure, Product Safety, etc.	—	Major	Secondary
Fully Automatic Refrigeration Control.....	Yes	Semi-automatic	Yes

All types must be adaptable to future expansion without major interruption to the operation.

Processor's storage should be located adjacent to production line. This is usually a single-purpose building of simple design. Incoming and outgoing products should pass through different doors for better inventory control. Stacking pallets systematically simplifies handling.

The long-term storage contains a great number of items which must be accurately placed for quick, efficient receipt and shipment. Loading and unloading



Machine room in Merchant's Terminal warehouse. Refrigeration equipment of York manufacture totals 245 tons capacity and uses "Freon-12" refrigerant.

should be under constant observation of checkers. Products should move promptly from carrier to storage and vice versa to prevent spoilage. Quick-freezing facilities should be available to handle incoming shipments, to freeze some processed goods (depending on locality) and refreeze items which may have partially thawed on the carrier. Close stacking in storage prevents adequate freezing without quick-freezing equipment.

Distributor's storage is used for receiving merchandise in bulk shipments and dividing these into orders for delivery. A bulk storage with one or more "breakup" rooms makes it possible to store bulk efficiently, and regularly move pallet loads to "breakup" rooms for shelving or grouping.

CONSTRUCTION PROBLEMS

To house a -5°F. storage, a building must be designed to minimize dangers of expansion and contraction strains, as well as ground freezing under the refrigerated storage. Column spacing should be at least 30' to assure efficient usage of space. Live floor loads on single-floor structures range from 300-500 lbs. per sq. ft., depending on function of building. Where large roof areas are involved, expansion sections, large cant strips and carefully designed flashing are needed to meet quick changes in outside weather and sun conditions, with accompanying expansion and contraction. It is imperative to realize that the internal structure (foundations, etc.), remain in near-constant temperatures, while outdoor conditions are continually changing, causing structural stresses which must be compensated for in the original design.

The insulation material may be of any permanent type with good "U" coefficient, but it must be permanently protected with a vapor barrier on the warm side. This requires special treatment at expansion joints, to prevent voids of any type. Heavy floor insulation does not prevent under-floor freezing and resultant floor heav-



Direct-expansion system in one of plant's 1,000,000 cu. ft. storage rooms provides proper temperatures for huge quantity of perishables. Big job efficiently handled by modern refrigeration!

ing. The fill under the floor structure will ultimately chill down to 32°F., and the soil will freeze. Some soils expand when freezing, so a heat source (warming pipes in the under slab or air ducts in the fill beneath) should be positioned below the floor insulation.

Metal-clad doors are preferable for cold storage. They should be kept to a minimum, and positioned to facilitate handling of traffic.

REFRIGERATION SYSTEMS

There are two types of refrigeration systems: brine and direct expansion. With the trend toward lower temperatures in frozen-food warehouses, the latter are gaining in popularity. This is especially true in "quick-freezing" warehouses, where temperatures as low as -40°F. are common. Although refrigerant compressors in most plants use single-stage compression, it is now recognized that two-stage systems, with modern booster compressors, are more efficient.

Actual air cooling is accomplished by: (1) ceiling-hung bare or finned pipe with gravity air circulation; (2) forced air circulation with or without ducts; or (3) small multiple units. For some buildings, forced air circulation is most popular. In the larger warehouses, all three types are utilized. Fan units require frequent defrosting (sometimes daily), but have a lower primary cost than pipe coils, which are defrosted once or twice a year. On the other hand, air units demand costly power, which, in turn, generates heat, requiring additional refrigeration.

For small freezer warehouses, refrigeration loads range from 7,000 to 12,000 cu. ft. per ton of refrigeration (larger structures, 12,000-16,000 cu. ft. per T). Thus, a warehouse of two million cu. ft. volume requires about 150 tons of refrigeration.

* * * * *

Modern refrigeration has been an outstanding factor in the spectacular growth of practically every branch of the food industry. Today's huge refrigerated food warehouses are but one example.

As Mr. St. Onge outlines in his paper, the refrigerated storage of foods presents specific requirements common to all such installations. In discussing these requirements with your clients, you can render helpful refrigeration service by recommending equipment designed to operate with Du Pont FREON® fluorinated hydrocarbon refrigerants . . . suitable for food warehouses of any size and purpose. These refrigerants provide maximum protection because they are safe . . . nonflammable, non-explosive, virtually nontoxic . . . and are manufactured under laboratory supervision assuring both purity and uniformity . . . essentials that promote efficient, economical machine performance over long periods of time. In addition, "Freon" refrigerants comply with building-code requirements everywhere. E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.



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for its fluorinated hydrocarbon refrigerants

"Combines the Esthetic and the Practical . . ."

THIS description aptly fits both the ultra-modern housing project shown here and the U·S·S NATIONAL Steel Pipe used in its construction.

In the recently completed Armstrong Court in Greenwich, Connecticut, NATIONAL Pipe is used not only in the central forced hot water steam plant which heats the huge project but in decorative hand rails and porch railings to carry out the trim, clean cut, modern appearance of the structure.

For over 60 years, U·S·S NATIONAL has been the standard pipe for conventional hot water and steam

heating systems, fire control, and plumbing lines. And today it is the first choice, too, for modern radiant heating and snow melting installations. Long experience, the result of thousands of varied applications, has proved to architects that they can put their full confidence in the uniform, dependable, trouble-free performance of NATIONAL Pipe.

Whenever you plan your installation, regardless of the type of service called for, plan on using U·S·S NATIONAL Steel Pipe. Large or small, simple or complex, NATIONAL can fill your every pipe need.

Armstrong Court—Dramatic design in light gray brick.

Architect: Holden, McLaughlin and Associates.

Associate Architect: Joseph G. Weir

General Contractor: Frouge Construction Company

Engineering Firm: Winfield S. Bondy



THE STURDY, HANDSOME NATIONAL PIPE porch railings carry out the modern motif of the three-story structures. These different-level buildings are cleverly disposed on a hilly site to make the most of the relation of the various blocks to green areas.

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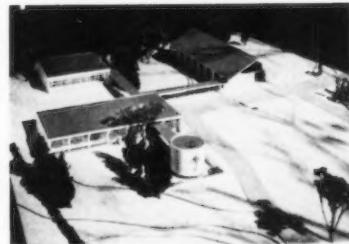
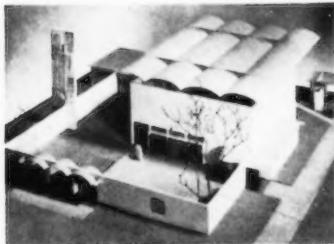
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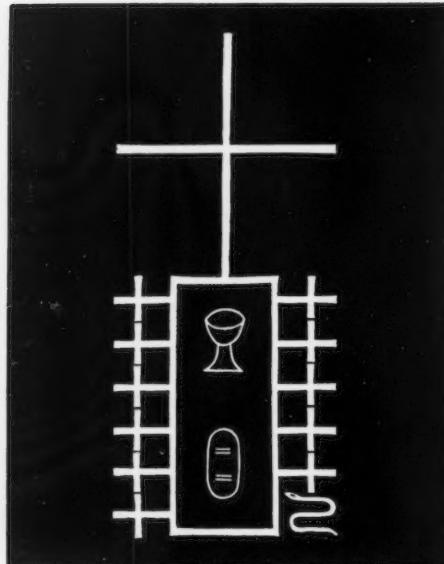
At a time when religious building activity is engaging the attention of many architects and engineers, ARCHITECTURAL RECORD takes satisfaction in presenting its ninth major study on this subject within the past ten years. Unlike earlier studies, this one is introduced by the thoughts of three men prominent in religion.

Tradition and Today's Ethos

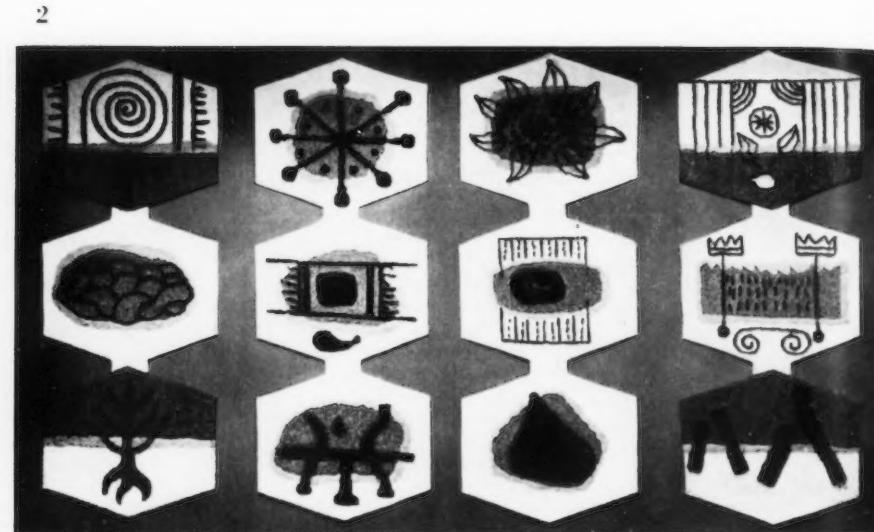
by Reinhold Niebuhr

A noted theologian and well known author, Dr. Niebuhr is Dean of Union Theological Seminary.

ARCHITECTURE, as every artistic discipline, requires the forming power of a great tradition and sufficient vitality to insure the adaptation of that tradition to current interests. Without adaptation the tradition becomes archaic. Church architecture is particularly dependent upon these two factors, and both of them are more complex than the requirements of architecture in general. For the tradition must combine religious and artistic



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elements and the current interest must include not only the general cultural situation but specific religious ethos.

The "great tradition" in church architecture has been the Gothic one, first elaborated by the monastic architects of the Middle Ages. Many have questioned whether Gothic architecture is the most perfect expression of the ethos of the Christian faith or whether it mirrors the ethos of the Middle Ages too much to express contemporary Christianity adequately. It has a supreme position because it satisfies some very fundamental needs of church architecture. Gothic vaulting and the church spire are fitting symbolic expressions of the yearning of the religious spirit for the ultimate beyond the immediate concerns of life. The broken lines of Gothic are moreover perfect expressions of the Christian concept of the discontinuities of life; of the contrast between man and God, between sin and grace. The classic temple cannot be an adequate expression of the Christian faith; its rounded columns and vaults express classical complacency rather than Christian tensions. The fact that Gothic has survived the Middle Ages and is found so satisfactory by many Protestant churches is proof that it expresses something more universal in Christianity than the ethos of a bygone age. On the other hand, efforts to adapt Gothic architecture frequently suffer from archaism. When this happens it proves there is insufficient vitality in the religious or architectural tradition to adjust and apply the tradition to contemporary interests, i.e., to the temper and functional requirements of a technical age, more particularly an age of steel.

In addition to the Gothic, America has only one other religious architectural tradition; that of the New Eng-

land meeting house, in which the simplicities of the Puritan faith come to an expression as contrasted to the complexities of medieval faith. The meeting house may be regarded as a distinctively Protestant form of architecture which unfortunately existed in its purity only in the small New England village. When wealth came to town and city and when new skills and technical powers were developed in our industrial centers, there was not enough force in the religious tradition to discipline all these new powers and potentialities. As a result, many churches were built which distinguished themselves from grain elevators primarily by the amount of gingerbread added to the building. The prevailing "style" on the Eastern seacoast came to be a combination of bungalow and campanile in which the squatness of the building was accentuated by the majestic dimension of the campanile. The churches built in the General Grant period shared and accentuated all the atrocious motifs which supposedly conveyed an idea of grandeur in private, civic or ecclesiastical building. Happily these days are past.

The new church architecture which is emerging in recent years, and of which the buildings of such architects as Pietro Belluschi are striking exemplars, seek to combine the virtues of Gothic with the simplicity of the New England meeting house. In America this represents the union of two great architectural traditions, and in Western civilization it represents a vital adaptation of a great architectural tradition to the ethos of a technical age. At its best the new style seeks to preserve the suggestions of aspiration and of concern for the ultimate with chastity of form, and may suggest the ascetic tendencies in the Christian life.

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1. The Last Supper, from the book *The Life of Jesus*, designed by Rudolph Koch, European type designer. Reproduced by courtesy of Devin-Adair Co., N. Y.

2. Wall decoration by Adolph Gottlieb for Congregation Beth El, Springfield, Mass., Percival Goodman, Architect. Photo courtesy of Kootz Gallery, N. Y.

3. A fine example of a medieval Catalonian Breviere, 15th cent., as done for Martin le Vieux, last king of Aragon in the Catalonian line

An American Synagogue for Today and Tomorrow

by Rabbi Maurice N. Eisendrath

Dr. Eisendrath was recently made lifetime president of the Union of American Hebrew Congregations and is as well an author and theologian.

THE SYNAGOGUE has had, throughout the centuries, three major functions, and each of these has given the synagogue one of its Hebrew names: Bet Ha'Tephilah, House of Prayer; Bet Ha'Midrash, House of Study; and Bet Ha'Knesset, House of Sociability. Today, the synagogue institution, as the center of Jewish living, whether orthodox, conservative, or reform, still conforms to this triple functional pattern. Consequently, the synagogue building must, in the first instance, be erected so it will fulfill all three needs.

Above all, the synagogue structure must create an atmosphere which will inspire worship. In Jewish tradition, there is no one or preferable form the synagogue must take in order to accomplish this lofty goal. We Jews have had a tendency through the centuries to build our houses of prayer in conformity with the architecture of our environment: Moorish mosques in Spain, Romanesque and even Gothic buildings in Central Europe, Colonial meeting houses in Colonial America. Until half-a-generation ago, synagogue architecture in America was a melange of styles. A few miles apart in Cincinnati, center of Reform Judaism for three generations,

we find the old Plum Street Temple and the Rockdale Avenue Temple. The former is an impressive example of Byzantine architecture, the latter an imposing 19th century adaptation of a Greek temple. New York City's world renowned Temple Emanu-el is architecturally a Romanesque cathedral, imaginative and magnificent, but still a Romanesque cathedral. The thousands of tourists who annually visit the national shrine of Congregation Yeshuat Israel in Newport, R. I. are struck by the similarity of that simple meeting house to the Colonial churches of New England.

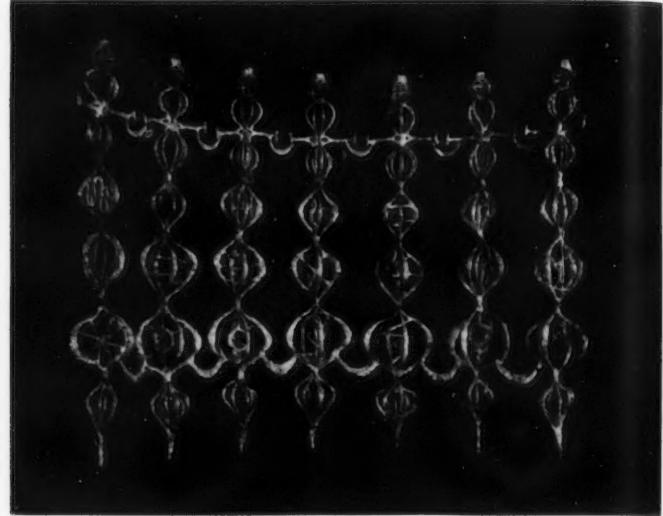
Today there is a clear trend in our congregations to prefer contemporary architectural forms. The members of the Synagogue Architects Consultant Panel of our Union, which consists of nearly 40 architectural firms, are committed to the belief that 20th century American Jews can be most suitably inspired to worship God in daily services, on Sabbaths, festivals, and holydays in temple sanctuaries that incorporate the clean lines and untrammelled spaces of contemporary architecture. This conviction is clearly expressed in the definitive new volume, "An American Synagogue for Today and Tomorrow," (UAHC 1953). Large or small, the sanctuaries now being built mirror the oneness of the Jew with this unique and beloved land.

Consequently, one of the significant new developments in synagogue architecture is the expandible



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sanctuary — a relatively small permanent sanctuary connected by some form of movable partition to a larger space, usually the congregation's social hall. Efficiency and worship are enhanced by such multiple space use.

One of the most widespread untruths about the synagogue decries its lack of beauty in ornamentation, color, the use of the plastic arts and the dramatization of Judaism's noble heritage and ideals in visible symbols. Ancient synagogues currently being excavated in Israel dispel this misapprehension beyond question. At Beth Alpha, at Dura Europos, at Caesarea, synagogues over 1500 years old have come to light with murals, floor mosaics, and all manner of magnificent ornamentation and symbolism.

Judaism itself is rich in symbols. In addition, the identification of our religion with the living experiences of the Jewish people, past and present, makes for an infinite variety of possible decorative motifs. The Hebrew alphabet itself has been demonstrated to be an excellent springboard for artistic expression. Thanks to the influence of our voluntary, tireless architectural panel, craftsmen and serious artists are working with architects all over America to bring to the synagogue increasing richness, deeper religious meaning and potential, and a significant opportunity for artists and craftsmen to achieve a degree of artistic immortality in the stone, wood, stained glass, walls, and sacred equipment of the new synagogue.

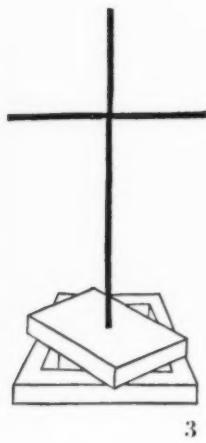
It must be emphasized that neither the inspirational quality of the house of worship nor its beautification can be achieved in an historical vacuum. Even as Judaism is a continuity of belief, life, thought and inspiration, even

so the synagogue contains timeless and unchanging elements. The Torah scroll, containing the Pentateuch, is still the core symbol of Judaism. It is always covered with a beautiful mantle, and usually with breastplate and crowns of worked silver, or other precious metal. The Ark, in which the Torah scrolls are housed, must be the visual focal point of the sanctuary. Over the Ark must be found the Ner Tamid, the Eternal Light. The light may be oil, gas, electric or any other form of flame. The lamp may take any form; it certainly need not be copied from medieval church incense burners, as has been so often done. But some kind of Eternal Light must be provided to signalize the need of the pious individual to shed light on the lives of God's creatures.

Any relevant form of symbolic decoration is permissible in reform synagogues, and in most conservative synagogues. (In orthodox synagogues, the use of the human form is prohibited, among other limitations.) Relevance applies to any form, and style, any technique — so long as the subject matter expresses some valid idea or ideal, person or incident, object or objective in Judaism's long history.

The Jews of the 20th century wish to "worship God in the beauty of holiness," in sanctuaries which are conducive to consecrated prayer in their atmosphere, beauty and symbolism; in sanctuaries which are consistent with the finest architectural achievements of 20th century America.

Study of all kinds has always been a positive religious commandment of Judaism. From early childhood to the last day of his life, the Jew has the responsibility of



1 The Last Supper, tempera by Mark Tobey. Collection: The Metropolitan Museum. Photo courtesy of the Willard Gallery, N. Y.

2 Bronze candelabra by Ibram Lassaw for Congregation Beth El, Springfield, Mass., Percival Goodman, Architect. Photo courtesy of Kootz Gallery, N. Y.

3 The Resurrection, from the book *The Life of Jesus*, designed by Rudolph Koch, European type designer. Reproduced by courtesy of Devin-Adair Co., N. Y.

4 Chapel du Rosaire des Dominicaines de Vence, by Henri Matisse. Photo by courtesy of *Illustration*

learning more about his God, his world, his faith, and his people, through both formal and private study. As a consequence, every synagogue must be, not only a Bet Ha'Tephilah, a House of Prayer, but also a Bet Ha'Midrash, a House of Study.

Increasing numbers of Jews are coming to the synagogue for a variety of educational activities. The synagogue school must, consequently, be as flexible as possible. Multiple use of space is essential and the latest techniques of schoolroom construction are recommended, together with the most mobile and durable kinds of furniture and equipment. Space must be made available in most synagogues for arts and crafts, music, youth activities, library and museum, a Judaica or ceremonial objects sales shop, in addition to a number of classrooms which can be used both by children and adults. Nursery and Kindergarten rooms are used not only on Saturday and/or Sunday, but weekday nursery schools are increasingly required. Club groups, Boy and Girl Scouts, all kinds of extra-curricular activities are also housed in synagogue schools.

Using every good 20th century educational technique, Jews are continuing to fulfill the ancient Talmudic dictum that "The study of Torah is the most important religious commandment." We must have synagogue buildings which facilitate every form of study.

The social program of the synagogue (the Bet Ha'Knesset) is no less important in many ways than the worship services and the educational activities carried on in synagogue buildings. Every synagogue has auxiliary groups: Sisterhoods, Men's Clubs, Young Married



circles, youth groups in various age brackets, and specialized interest clubs. Meetings, dances, dinners, cultural programs of all kinds, dramatic performances, and the like, take place in our synagogues, and the building must contain suitable facilities for all of them. The problems involved are not peculiar to the synagogue, of course, but are intensified by the fact that the synagogue, particularly in smaller cities, so frequently serves as a social center for the entire Jewish community. The social facilities of the synagogue building must be adequate, flexible, attractive, and durable.

The synagogue institution has survived and is flourishing as the place where Jews can come close to our God in worship, celebrate festivals and holydays, learn more of Judaism and the Jewish people, and join in social fellowship and relaxation. To build a structure to house all these functions is no simple task. To build the synagogue not only functionally but beautifully so that it imparts inspiration is even more difficult. Since the end of World War II more than 250 synagogues have been built. Most of them prove that no difficulties are insuperable if competent architects join with talented artists and devoted and understanding synagogue leaders to plan and build synagogue buildings which simultaneously reflect imaginative architectural form, meaningful and aesthetic symbolic expression, careful planning of space utilization to fulfill the purposes of the structure, and the most creative spirit of American life. Permeating the American synagogue for today and tomorrow is the clear determination of our people to build houses in which truly the spirit of God may dwell.



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1 Job, 1947, by Milton Horn. Photo by courtesy of the American Union of Hebrew Congregations.

2 Interior of church at Oosterbeek, by Architects F. A. Eschauzier, F. Eschauzier, Jr., & B. van Kasteel. Photo by R. Melchers, reproduced by courtesy of the Netherlands Forum.

3 Valance of Ark Curtain by Adolph Gottlieb for the Congregation Beth El, Springfield, Mass., Percival Goodman, Architect. Photo by courtesy of the Kootz Gallery, N. Y.

4 The Loaves and the Fishes, from the book *The Life of Jesus*, designed by Rudolph Koch, European type designer. Reproduced by courtesy of Devin-Adair Co., N. Y.

5 Medieval head of a "Devot Christ," wood, painted, for the cathedral of Saint Jean de Perpignan.

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The Church as Instrument and Expression

by John LaFarge, S.J.

Father LaFarge has, for more than 20 years, been both associate editor of the Catholic review America and Chaplain of the Liturgical Arts Society.

LET ME SAY AS INTRODUCTION that I am offering the following observations not as an expert in architecture, which I am not, but simply as a former parish priest and as an observer of contemporary trends. To the question, "What general suggestions would you make to someone commissioned to design a church who was not particularly familiar with the needs of ecclesiastical architecture?" a few simple remarks may help to avoid some confusion.

A religious building, be it Protestant or Catholic, church or synagogue, may be looked at from two main points of view: as an *instrument* of religious worship, and as an *expression* of religious conviction and sentiment.

The term "instrument" as well as the term "worship" covers a great variety of concepts. The first thing an architect would naturally investigate would be the *nature* of the worship conducted in the structure he is to build. If it consists chiefly of Bible reading, preaching and hymn singing, his building will give special prominence to lectern, pulpit, choir and organ. On the other hand, if a Catholic church is contemplated, he will need to acquire at least an elementary knowledge of the requirements of the Catholic liturgy, of which the central act is the celebration of the Mass (or the Divine Liturgy, as it is called in churches of the Eastern Christian

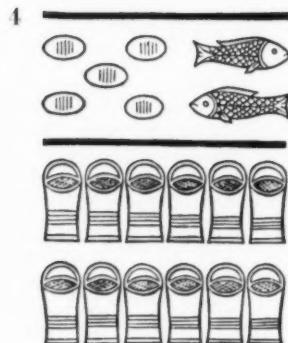
rites.) He will familiarize himself with the construction of the altar and its various appurtenances, mobile and permanent — such as the sanctuary or chancel — and will make sure that it is given proper prominence and space. (I recall a "model" Catholic church constructed by a very prominent firm of New York architects which reproduced a wealth of exquisite details from old French parish churches but placed the altar in a sanctuary so small that the full ceremonies of the Mass were almost impossible to execute.)

Such information is readily available. The Liturgical Arts Society, for instance (7 West 42nd Street, New York City), is glad to indicate standard sources of information. The dignity and integrity of religious worship are immensely aided by familiarity with the needs of the more obvious functional requirements of a church (I am taking the Catholic church as an example). Consider: the proper construction of the baptistry; of the confessional or confession boxes — for privacy, accessibility and the comfort of all concerned; the location of choir and organ according to the Church's prescriptions on church music (no more choir lofts in the rear of the church!); the location and structure of side altars, where desired for devotional purposes; the relation of pulpit or reading desk to the sanctuary, and so on. Last but not least is the layout of the sacristy or sacristies.

Provision for worship means also provision for worshippers: their distribution and relation to the ceremonies in which they take some part as well as to one another, to the preacher, etc. This means obviously



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their comfort and convenience, proper lighting, acoustics, heating, ventilation, entrance and exit, and other human needs.

Two or three current trends in church building are helpful to keep in view. Today there is a tendency to *differentiate* more carefully between the various types of church buildings. The requirements of an edifice devoted exclusively to the service of a monastic community, with its special provision for chanting the daily office, for instance, would be quite different from those of a parish church, where the emphasis is upon its strictly pastoral and congregational character. These, in turn, intended for daily, indeed for hourly use, would differ from a pilgrimage shrine, fitted for special occasions and large crowds, and featuring some particular local object of veneration. Along with this greater attention — quite in accordance with our times — to a building's particular function comes also a tendency to greater *simplicity*, especially in decoration. An interesting example is afforded by the restoration of many of the bombed-out churches in Europe. Buildings once highly ornate, such as the St. Michaelskirche in Munich, or the lovely Liebfrauenkirche in Trier, are restored with a simpler decorative scheme, and in some cases with a more distinctively pastoral character. Where special climatic conditions prevail, as in tropical or sub-tropical countries, much freer use is made of opportunities for special types of construction and fenestration. The trend to greater simplicity is seen also in less profuse decoration — sculpture or painting — and more attention to strong and impressive featuring of those basic indispensable elements prescribed by the liturgy. (I doubt if we shall see in the future many such *tours de force* as the chapel of Leland Stanford University in California!). Parallel to this is greater attention to the *symbolic character of the building itself* (cross, tower, etc.) and the rich possibilities in its development.

Provision for purely social features will vary according to the customs of different religious organizations. In Catholic churches, care is taken to keep such facilities quite distinct from the actual place of worship, whether in an adjoining building or in the basement.

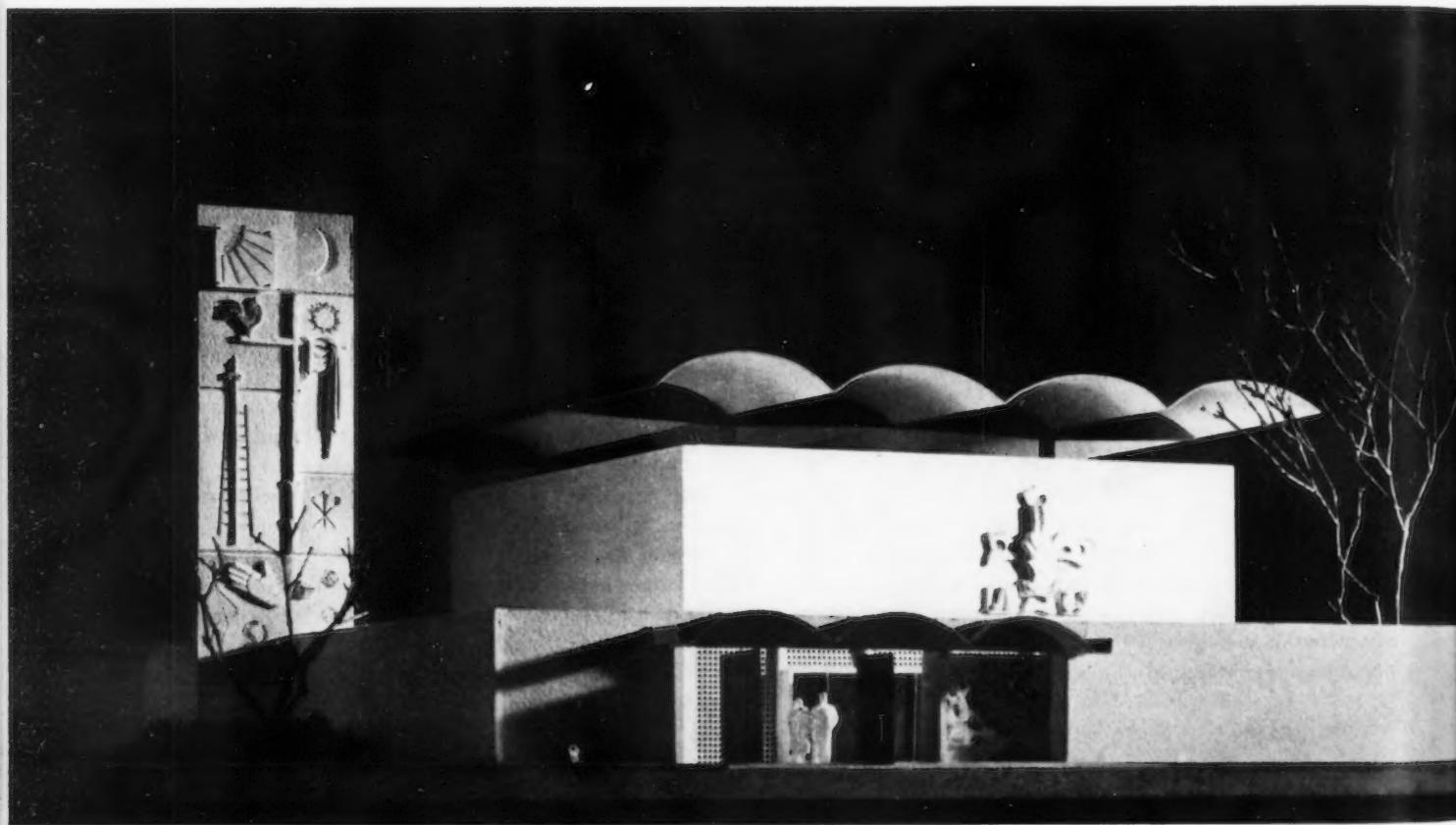
The need for some fitting expression of religious conviction and sentiment does not, of course, lend itself to precise suggestion. However, much of the uncertainty that might seem to affect these less tangible requirements is avoided if the church's functional character is *adequately and imaginatively* understood. Since the church's liturgy is itself an eloquent expression — in word and symbol — of religious sentiment, an edifice clearly related to its performance shares in the imaginative overtones of corporate worship. The same remark would apply to the church's other functions, that of a home for hearing the Word of God, and for collective prayer and individual meditation.

A church traditionally is a place of seclusion and interior recollection, a refuge from the noise and disturbance of the surrounding scene. In a Catholic church its *sacral character* is strongly emphasized by a style and furnishing tending to produce a sense of reverence, culminating in the reverential elements of the altar, with its tabernacle and reserved Sacrament. At the same time, the church building also emphasizes the joy, the hope, the upward *elan* of religious belief. People retire into their church in order to go out from church and bring new life and hope to the world around them. It is oriented in both directions; to the mysteries of the unseen world beyond, and to the spiritual needs of struggling humanity. The history of church architecture shows varying emphasis upon one or the other of these two great poles of attitude. But in some way or another neither of them can be ignored. One of the most interesting features of the best contemporary church architecture is to observe how skilfully they have been combined.

Preliminary Design for Two Churches

Puerto Ordaz and Ciudad Piar, Venezuela

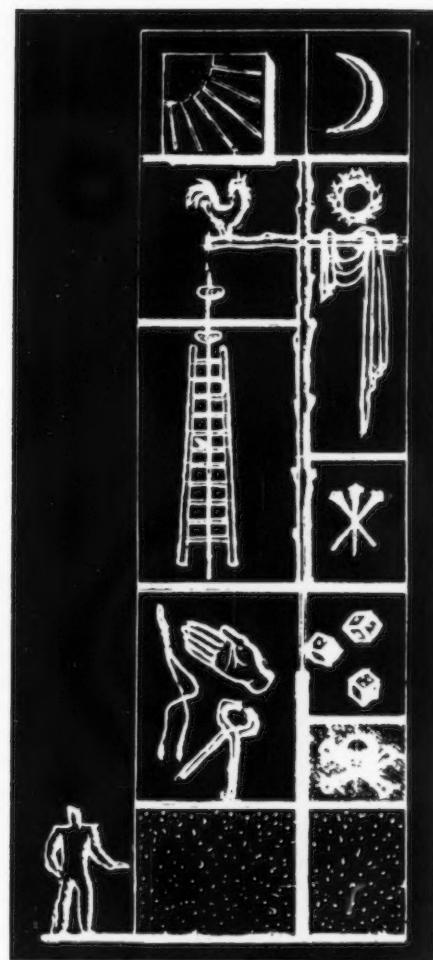
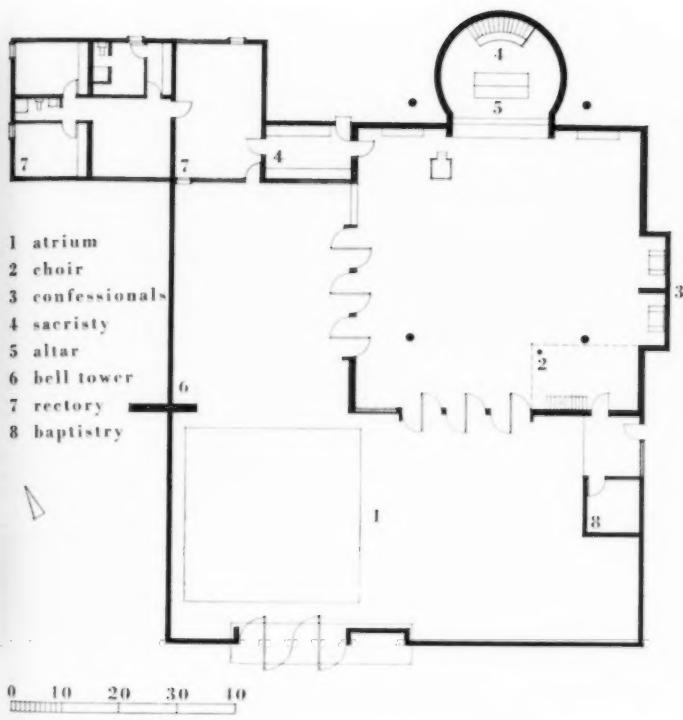
Architects: Francisco Carrillo Batalla, Carlos Guinand, and Moises Benacerraf—all of the Oficina Planificación y Vivienda, Caracas.
Consultants: Paul Lester Wiener and José Luis Sert



IN ACCORDANCE WITH LOCAL TRADITION, each of the two towns U. S. Steel is now building near the ore mines of Cerro Bolívar will have a community center with a promenade flanked on three sides by civic and commercial buildings and on the fourth by the church.

Although the scheme may change with development and actually be built in different fashion, this preliminary visualization is presented as a design idea. Similar forms for each church are envisioned, with elements differently disposed. The free interpretation of decoration by local craftsmen should yield further variety.

José Sert says, "We have attempted a design that avails itself of modern engineering and materials but have tried to avoid the sensationally 'new look'. The proportions of old structures were carefully considered, and *scale became the main concern*. This small church will look spacious, because doors and other elements are kept small, walls continuous and unbroken, materials unchanged, accents in decoration few and powerful, color accents at strategic points, with white and gray the predominating tones."

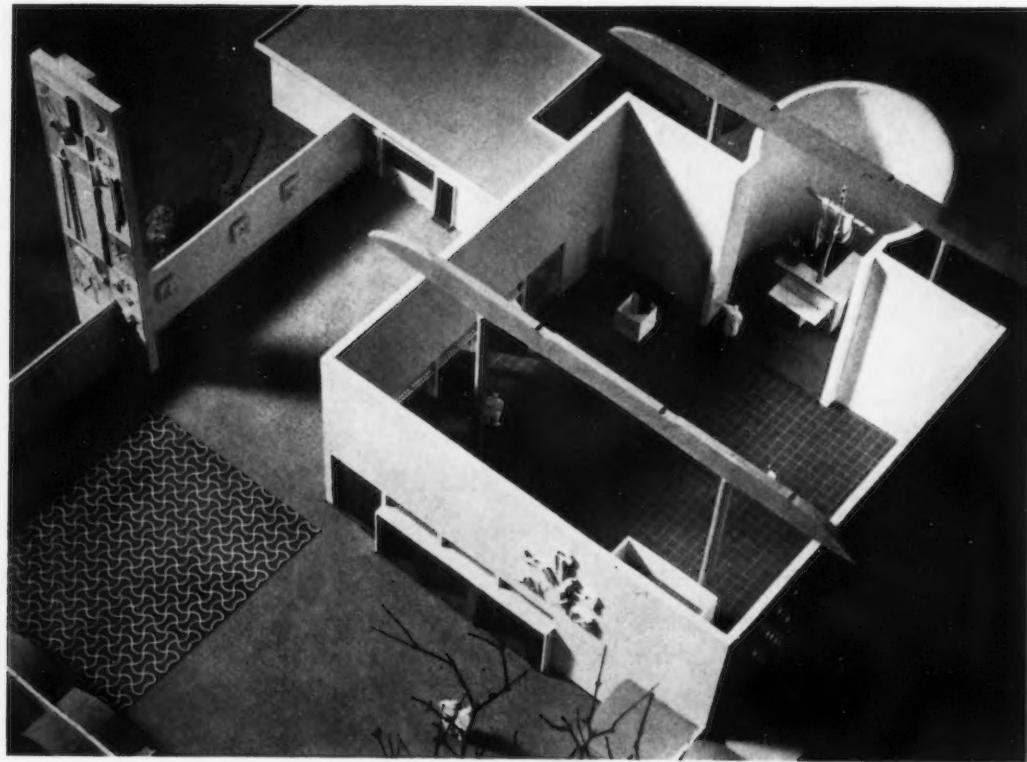


Design for the bell tower is a 12 meter high slab, above, with colored bas-relief decoration symbolizing Christ's Passion

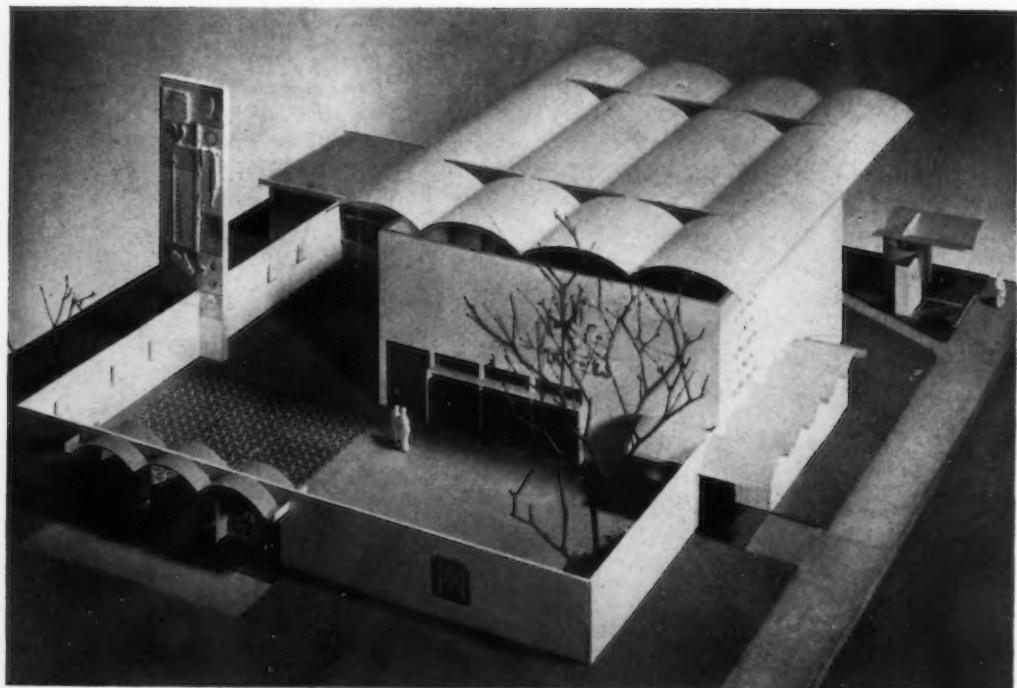
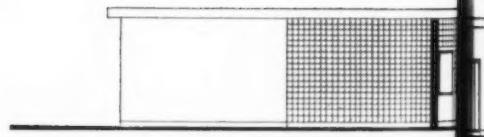
Proposed plan for Puerto Ordaz, left, is a square within a square with a more than semi-circular apse. Such a shape facilitates concealment of artificial lighting

Richard H. Ahlhoff



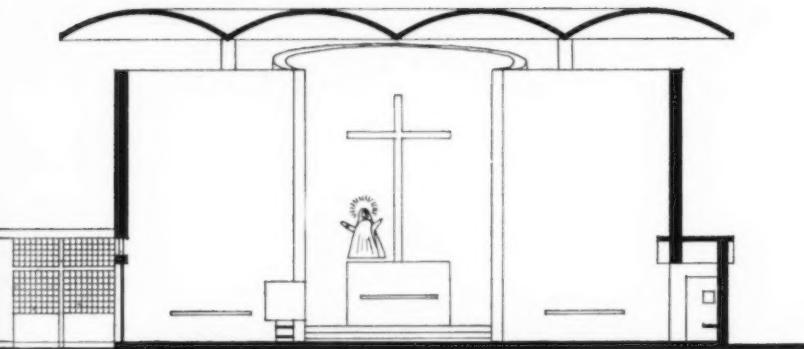


Main structural feature of the design is the "floating" roof, removed above and shown in place below. The thin, shelllike structure is a series of four membrane vaults, poised on only four columns, which acts as umbrella and sunshade, casting cooling shadows on walls. The vaulted soffit will be painted soft blue



RELIGIOUS BUILDINGS

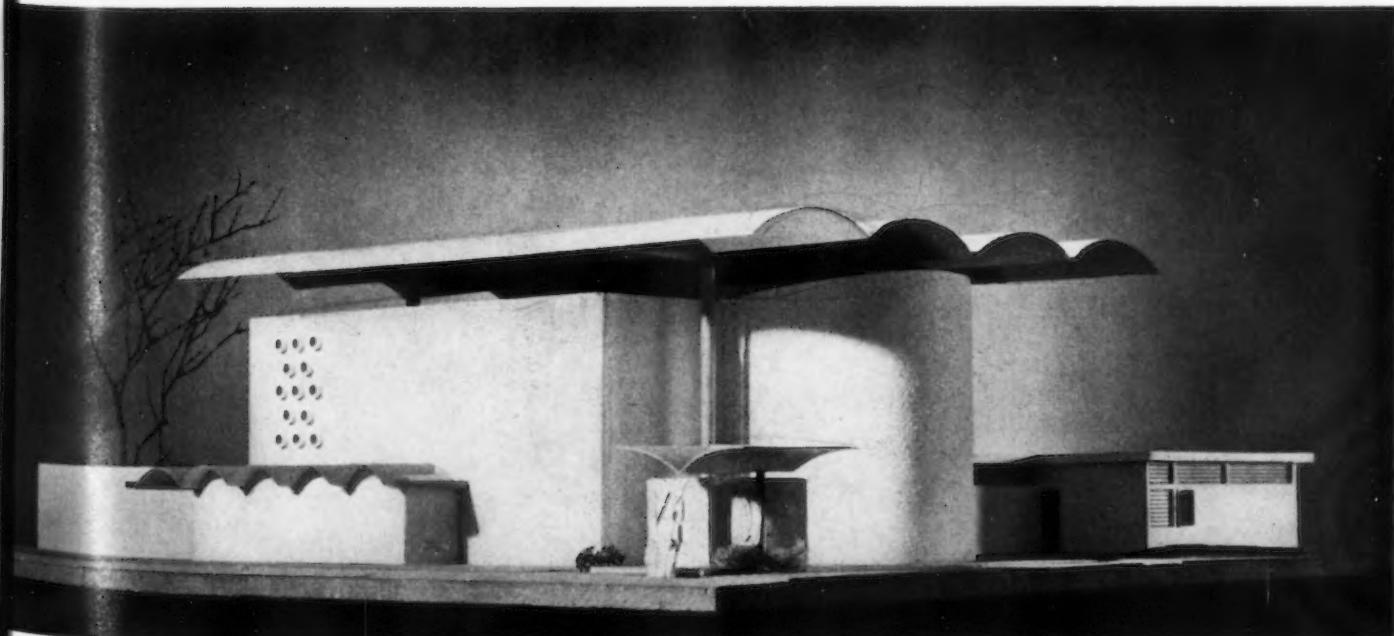
Puerto Ordaz & Ciudad Piar



Preliminary design model for the community center of Puerto Ordaz, above, shows the church in the foreground facing the square. Other buildings flanking the proposed promenade are civic or commercial in character

Eye level view of the church model from the side, below, shows the strong sculptural form of the circular apse, the rectory wing at right, the lateral confessionals at left, the small detached chapel in the foreground

Richard H. Althoff



Temple Beth Sholom, Miami Beach

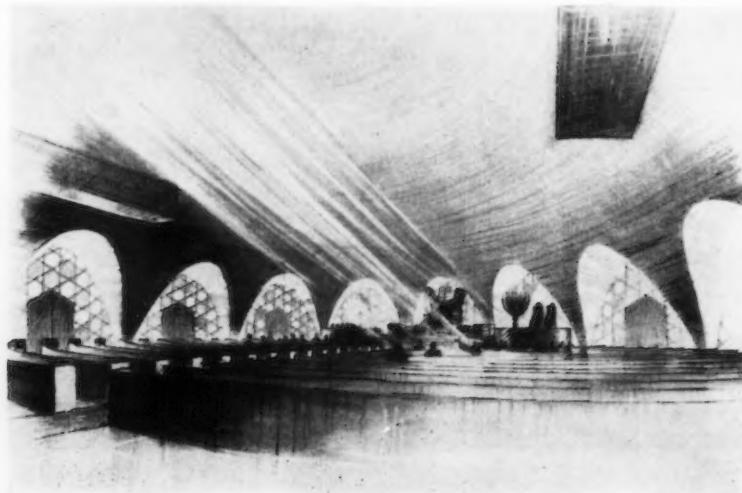
Percival Goodman, Architect; A. Herbert Mathes, Resident Architect;

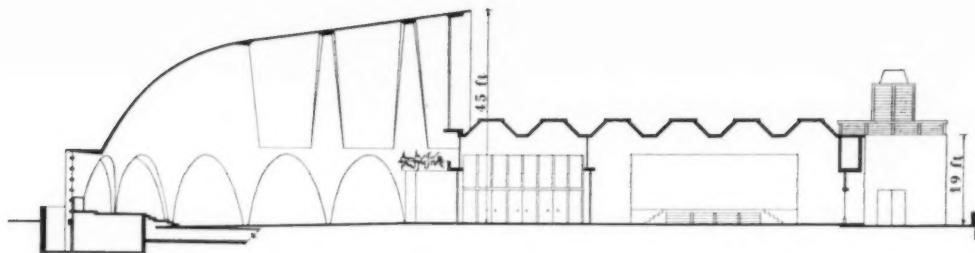
Amman & Whitney, Structural Engineers

THIS SYNAGOGUE DESIGN holds both structural interest and esthetic appeal. The handsome and peculiarly fitting form for the main sanctuary is a thin shell concrete quarter-dome, 3 in. thick at the top, which spans 100 ft. A rhythmic succession of parabolic dormers glazed in color will pierce this shell at its baseline. Roof framing for the remainder of the building will consist of a 4 in. thick concrete "hipped plate" system much like a giant corrugated board, which spans 80 ft. and each corrugation of which measures 4 by 14 ft. Roofing material for the entire structure will be a sprayed-on cocoon plastic, which is available in several colors. The entire building will be air conditioned.

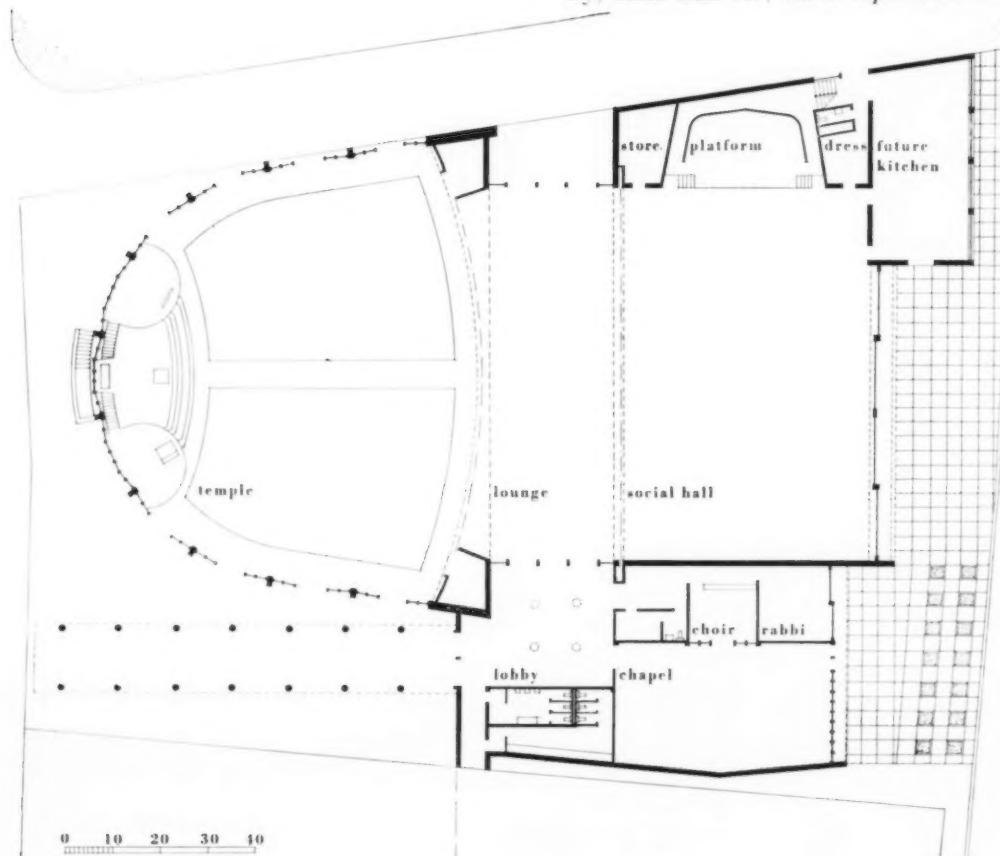


Delicate character of the structure is apparent from the street, above. Grillwork in the dormers is concrete. The covered entrance walk leads to a skylighted lobby which will connect temple with future school, shown in right background

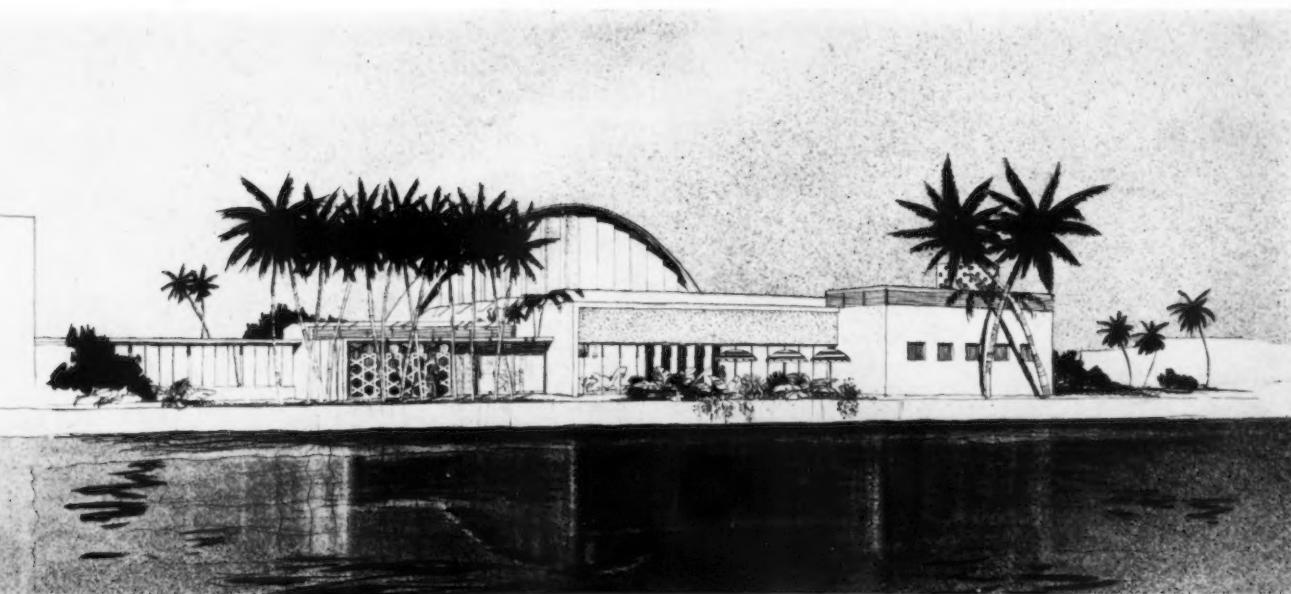




Flexible, multi-purpose space for both religious and social use characterizes the plan, below. On holy days, the sanctuary, which seats 750, can be expanded to take care of 1800



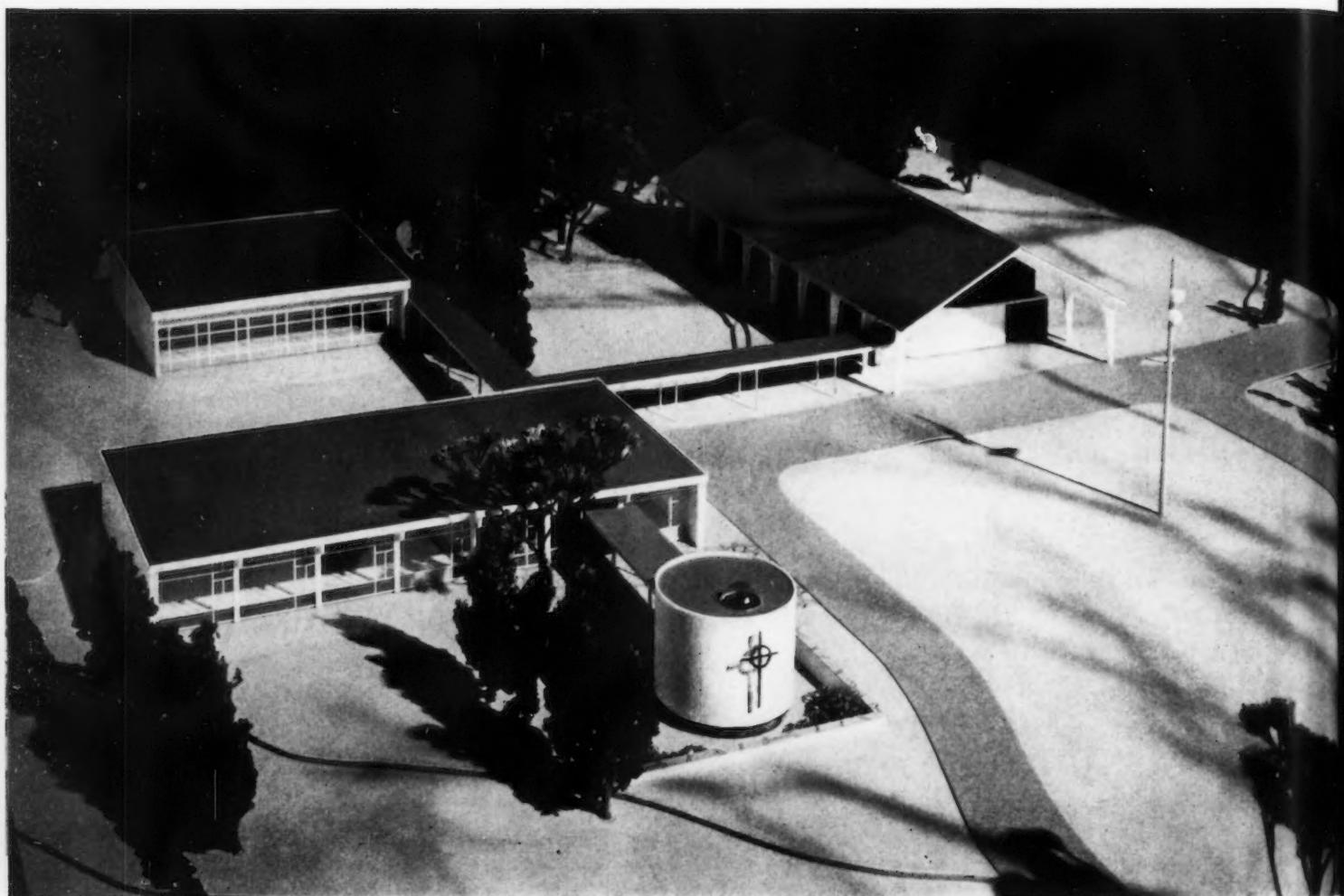
There will be a terrace for the social hall and a religious garden for the chapel, both of which face the Biscayne waterway, below. In favorable weather, chapel services can be held outdoors in the garden, shown at left in architect's sketch



Trinity Church, Presbyterian, Natick, Mass.

Architects: *The Architects Collaborative and R. S. Morehouse, Associate*

Minister: *Rev. John D. McDowell*



Robert D. Harvey

RELIGIOUS BUILDINGS

Springing from a new residential development and officially organized as a Presbyterian congregation only in December 1952, the new group acquired a $5\frac{1}{2}$ acre wooded plot near the school and retained TAC as architects for their neighborhood Christian center. The old farmhouse on the site was relocated and is now the Sunday school; services are temporarily being held in the country club.

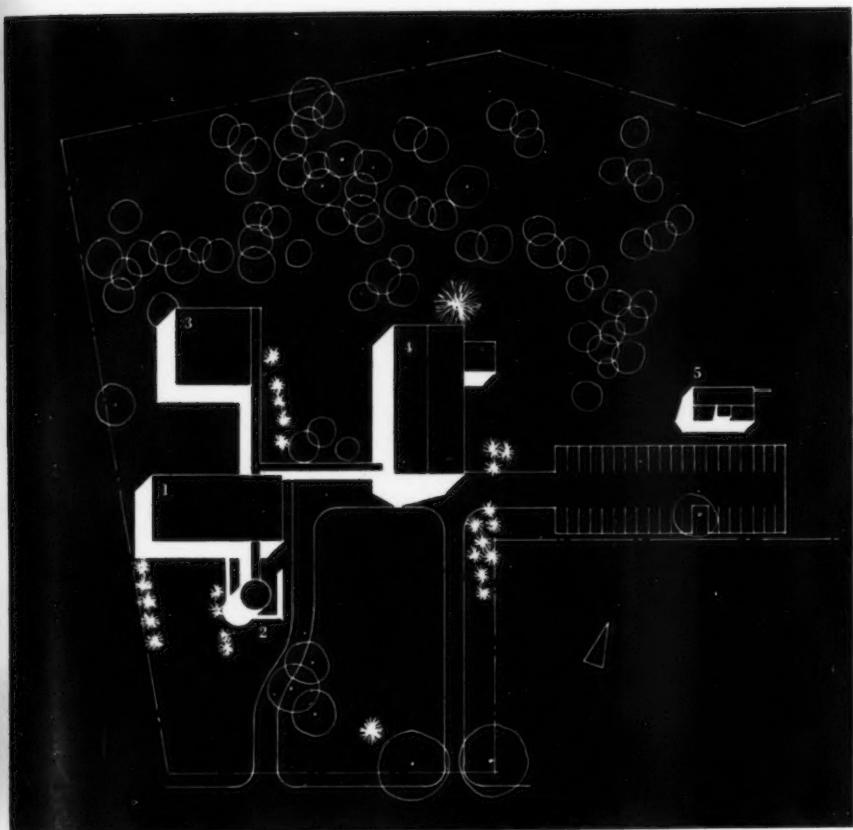
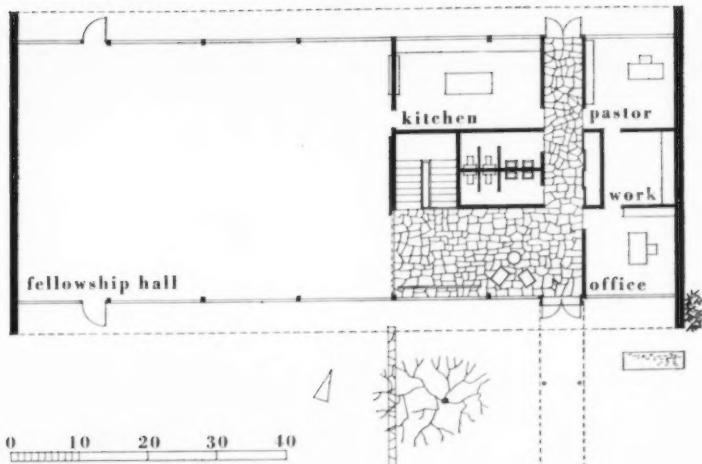
The master plan and model as shown call for a center comprising five elements (see plan, right page) which are to be constructed as separated units joined by covered walkways. Such a scheme makes possible more favorable orientation and adaptation to the site, as well as an interesting variety within its parts.

The Fellowship Hall and cylindrical chapel will be built at once. The former is a large multi-purpose room served by kitchen and offices and will be constructed so the end wall can be moved outward should future expansion be necessary. The basement will be developed for scout and other activities.

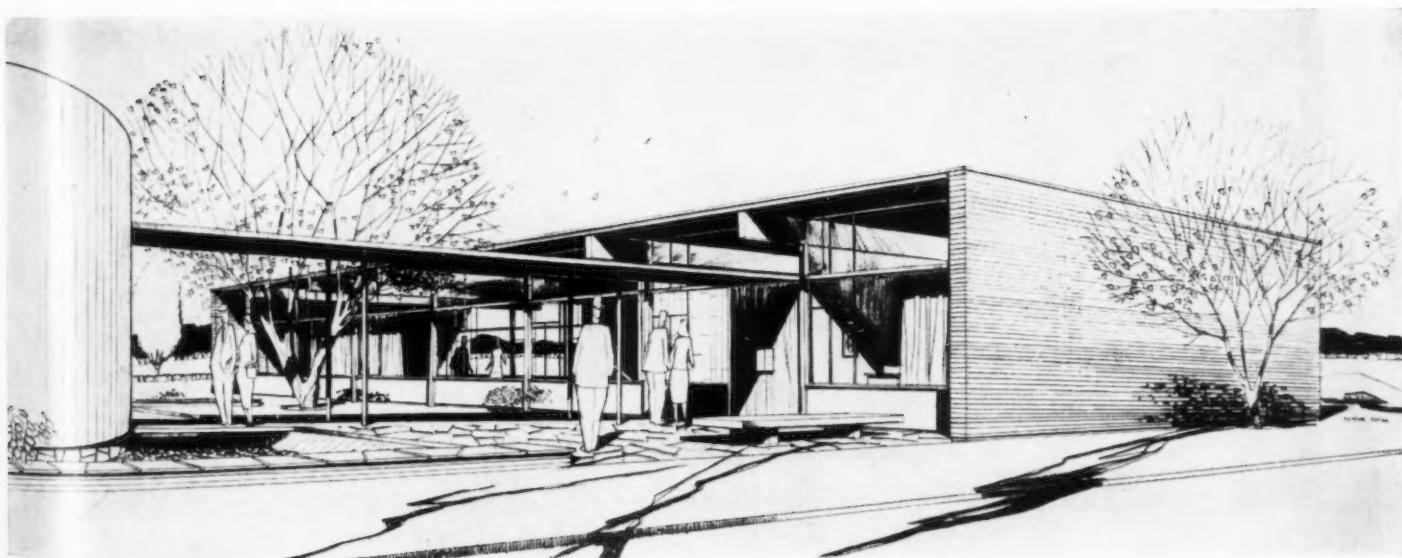
As shown in the plot plan below and in the photo, left page, the five elements of the center are as follows:

- 1 Fellowship Hall
- 2 Chapel
- 3 Christian Education
- 4 Church
- 5 Parish House

Detail Plan of Fellowship Hall at right

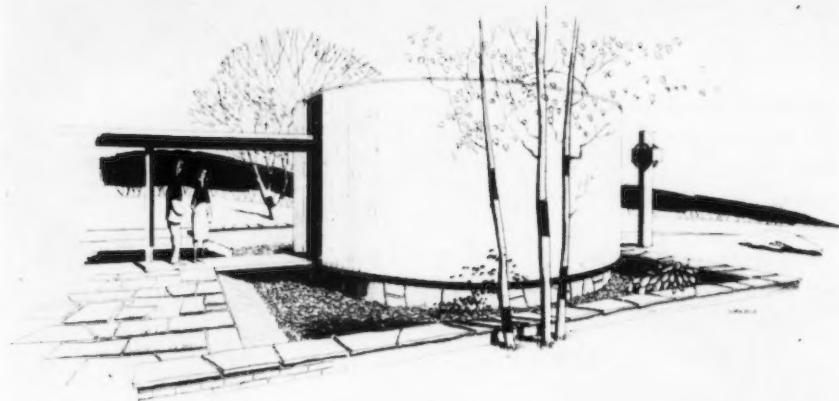


Drawing by Morse Payne



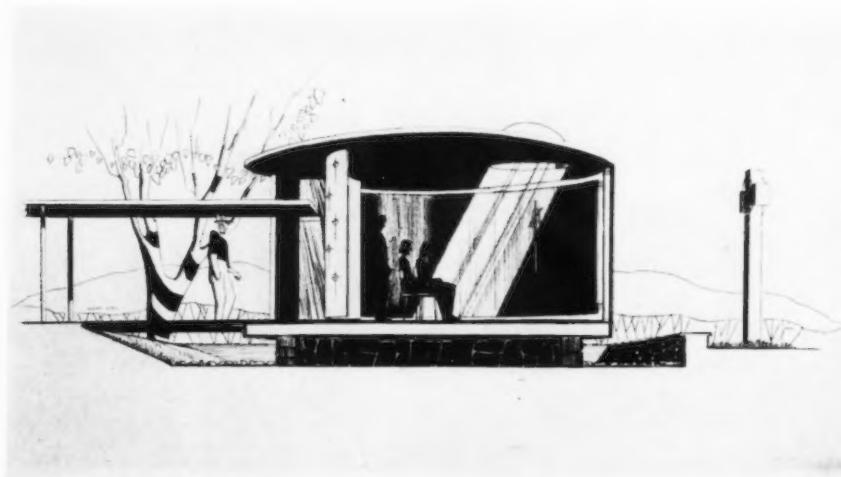
RELIGIOUS BUILDINGS

Natick Presbyterian Church



Drawings by Monroe Payne

The meditation chapel is intended for quiet prayer, private christenings and weddings. Its unaffected interior is enclosed by a drum of painted boards and lighted by glass over the entry and a plastic bubble in the roof. The pastor says, "Its roundness and vertical line against the horizontal line of Fellowship Hall speak to everyone that God is all encompassing and not only above, as the spire would have us think, but in our own and our neighbor's backyard."



Robert D. Harvey

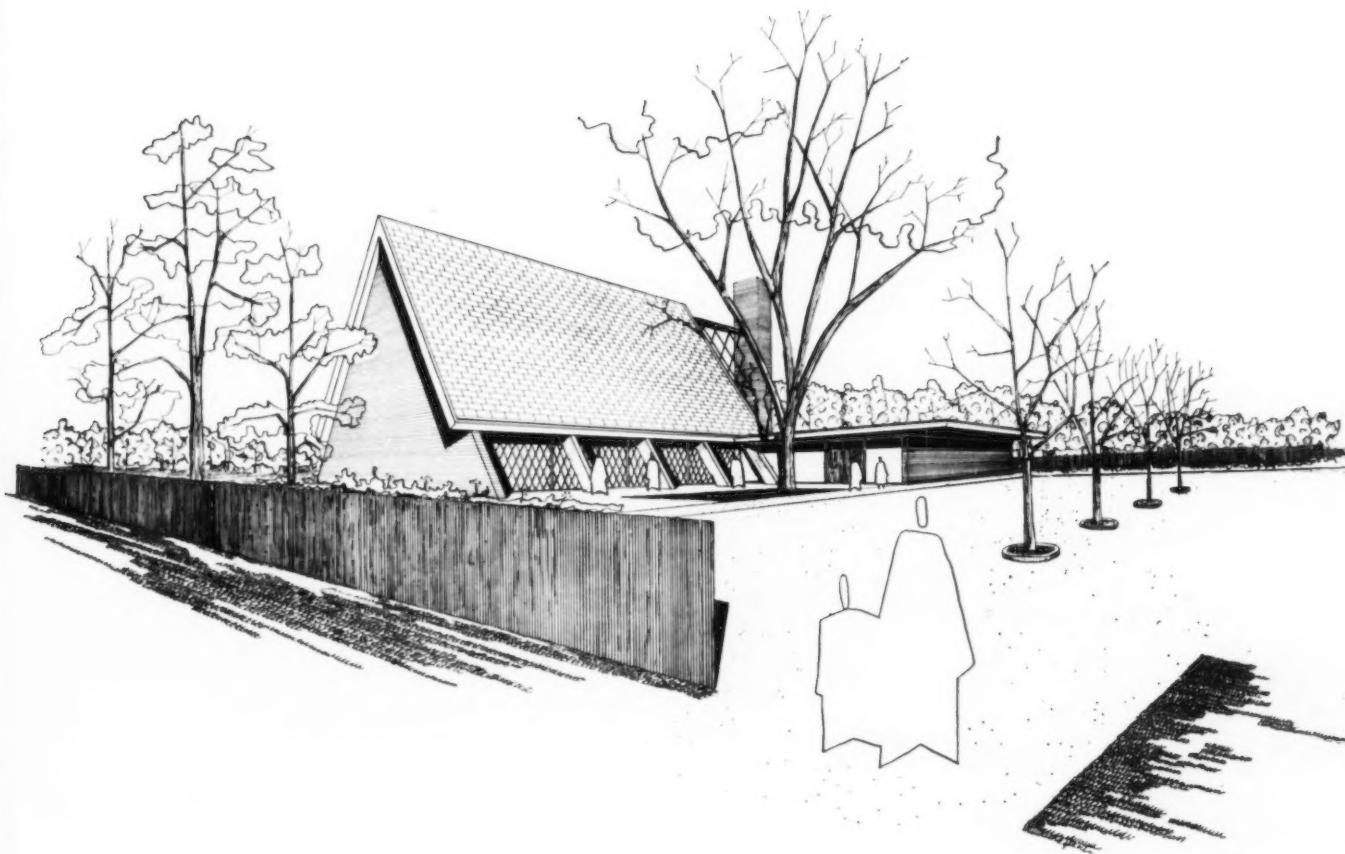


Unitarian Church, Plandome, L. I.

Architect: Edward D. Stone

Associates: Karl J. Holzinger, S. N. Torkelsen, J. D. Tuttle

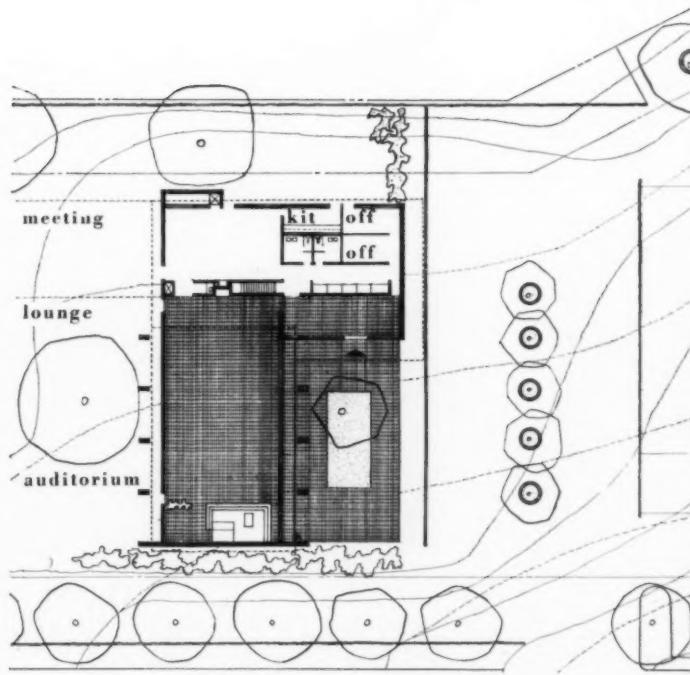
Structural & Mechanical Engineer: Peter Bruder



SEEKING both a characteristic church form and an economical method for enclosing a large space, the architect decided upon a wooden tent-like structure which will be supported on 12 by 24 in. California fir post-beams 45 ft long, which will be spaced 14 ft on centers and have a 60 degree cant. These will in turn be anchored by buried tie rods to prevent lateral spread at the structure's base.

The plan for the first and second stage work, right, is a simple L shape, with the meeting hall and ancillary services in a low skylighted wing running perpendicular to the auditorium. Future construction of Sunday school classrooms will extend this wing and complete the final T shaped scheme.

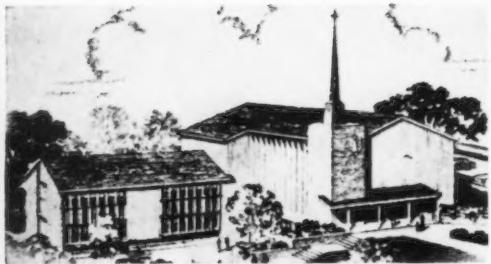
The design incorporates several interesting ideas, such as the double fireplace opening into the church proper as well as into the meeting hall, the polished brick floor for the auditorium, and the fine sense of scale and unity throughout which is achieved in part by the repetition of the 60 degree angle motif in exterior and interior grillwork.





Central Lutheran Church, Yakima, Wash.

McLoney & Whitney, Architects



EXECUTED in the Pacific Northwest idiom, this pleasing church typically enough makes use of wood for structure, protection and decoration. Designed for a rather sharply sloping site, the scheme takes advantage of natural contour to provide both natural light and at grade access to the lower level. The small picture at left shows the future two-story wing which will house additional area for Sunday school classrooms and kindergarten.

Upper level wing to the right houses office group; a large fellowship room and its kitchen occupy the space below the main nave.

Willard Hatch

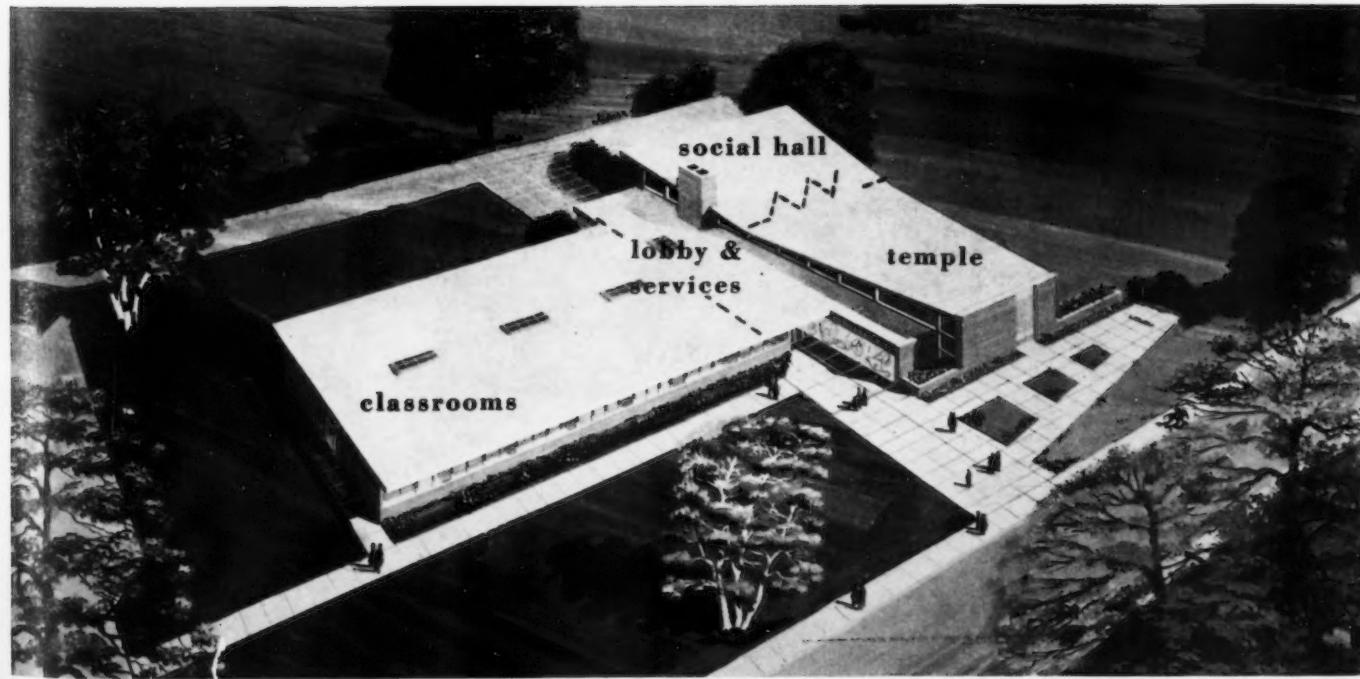
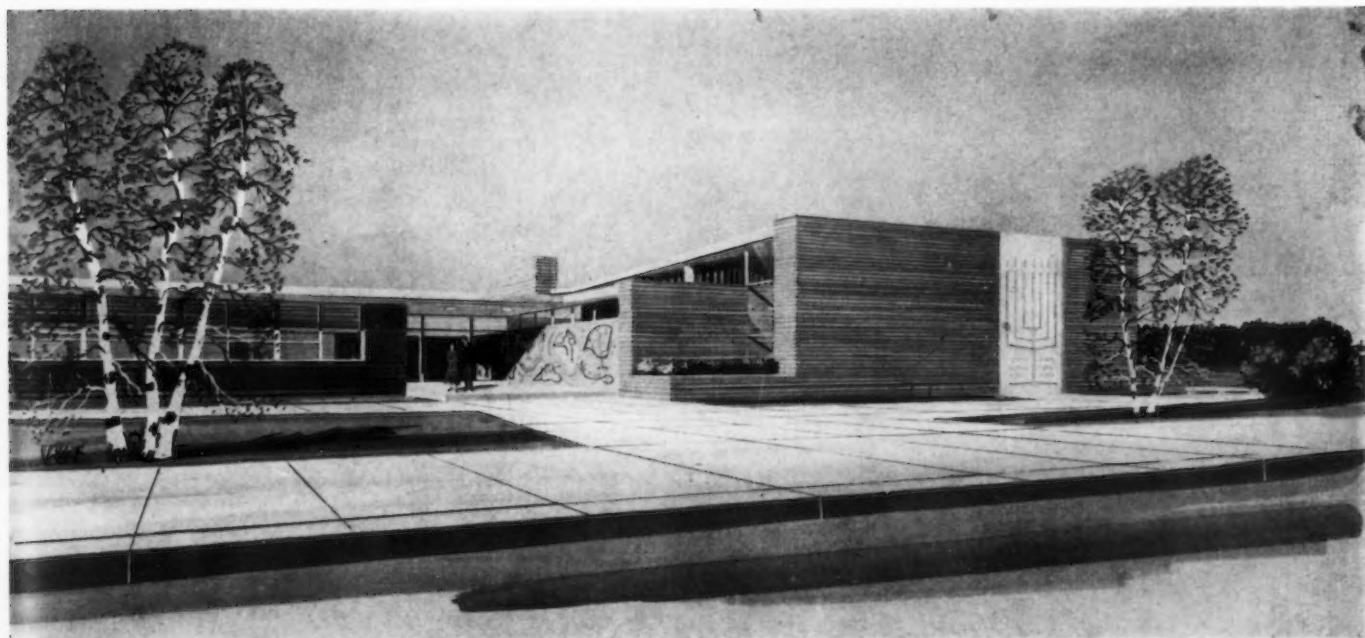


Levittown Reform Temple, Levittown, L. I.

*Aarnio & Hibner, Architects, and
Lawrence H. Singer, Designer*

AT LOW COST, this structure achieves attractive design and a workable plan. The temple, seating 260, can be opened on occasion to the social hall to accommodate an additional 300. A kitchen at the lobby rear will serve both social hall and outdoor terrace.

Construction is under way on a sub-contract basis with clerk-of-the-works administration. The total cost of \$75,000, including architect's fee, is a remarkable \$6.50 per sq ft. All exterior walls are brick both sides; roof is exposed 2 x 6 redwood plank on either steel beams or a wood post and beam system; floors are asphalt tile on slab; building is heated by forced warm air.



First Methodist Church, Panama City, Fla.

Pearson, Tittle and Narrows, Architects

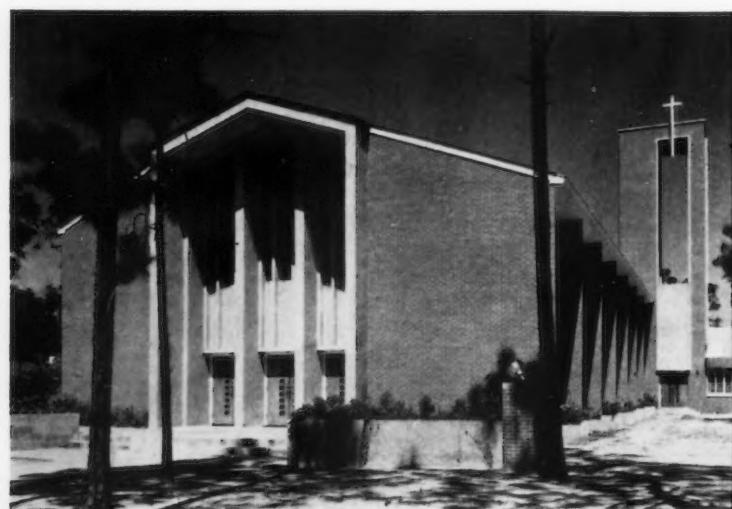
RELIGIOUS BUILDINGS

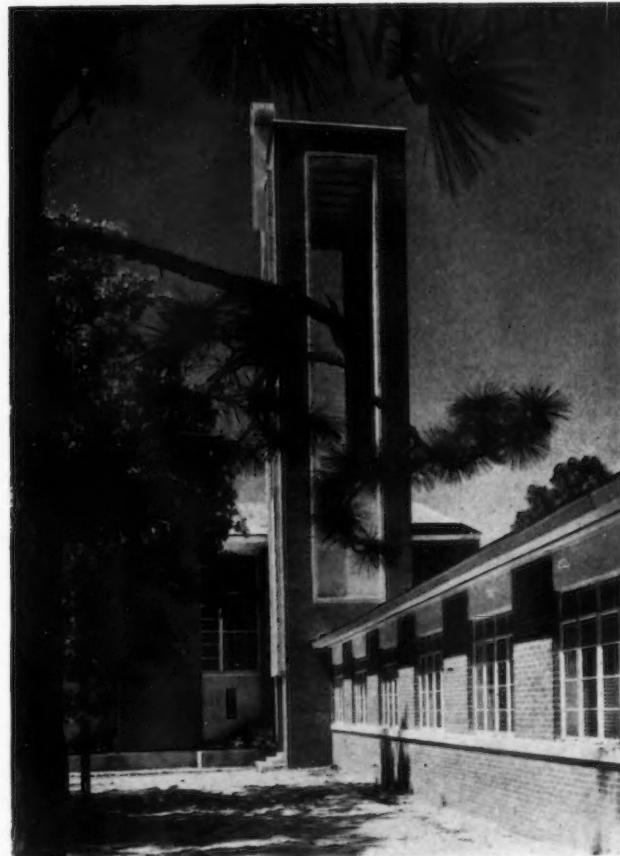
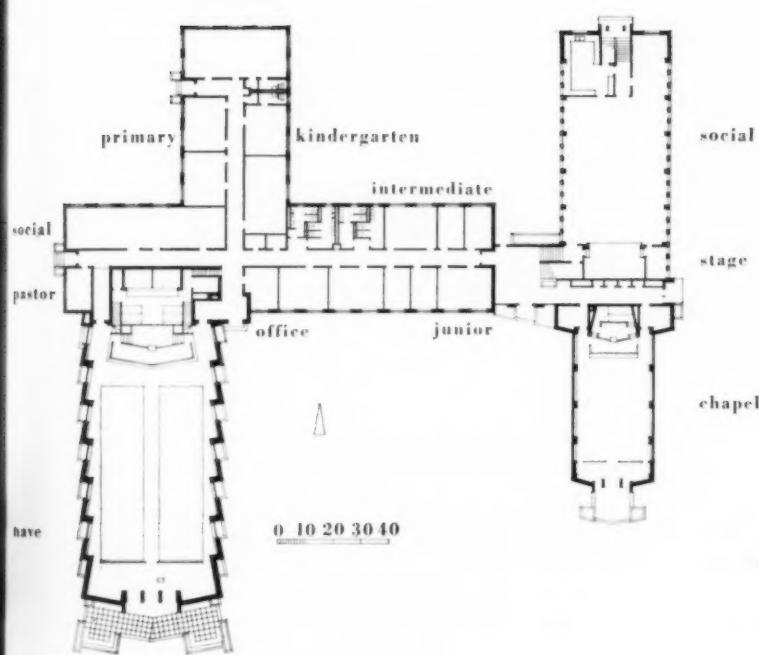
DESIGNED for a site comprising an entire city block bounded on opposite sides by a state highway and a city street, the problem was to create a structure offering access and attractive appearance from all angles, since there were no "front" and "rear" in the usual sense. Maximum off-street parking was provided.

Although the committee started with the idea of constructing a monumental pseudo-Gothic building, architectural advice proved the impossibility of such a scheme within the budget, and the more contemporary, straightforward design shown was the result.



The project was built in two stages, the social hall, chapel and classroom wing being added two years after completion of the main church and sunday school portion. View below shows entrance to church, with bell tower in background





Construction, at a cost roughly one half that of the proposed pseudo-Gothic scheme: Floors, slab on grade finished with asphalt tile; exterior walls, brick cavity with 2" air space, plastered inside; interior partitions block, plastered; roof, exposed wood trusses, purlins and beams in church and chapel, otherwise trussed rafters; all roofs covered with white cement shingles; all sash steel, either casement or awning type

Joseph W. Molitor







Ulrich Meissel—Dallas

The view above shows the glass-ended organ dormer as it appears from the principal street. Note particularly the cross-bracing (welded $\frac{1}{2}$ in. sq bars) placed in the column line immediately behind the glass. Visible at ground level is the main entrance, through which one enters the vestibule at the rear of the auditorium

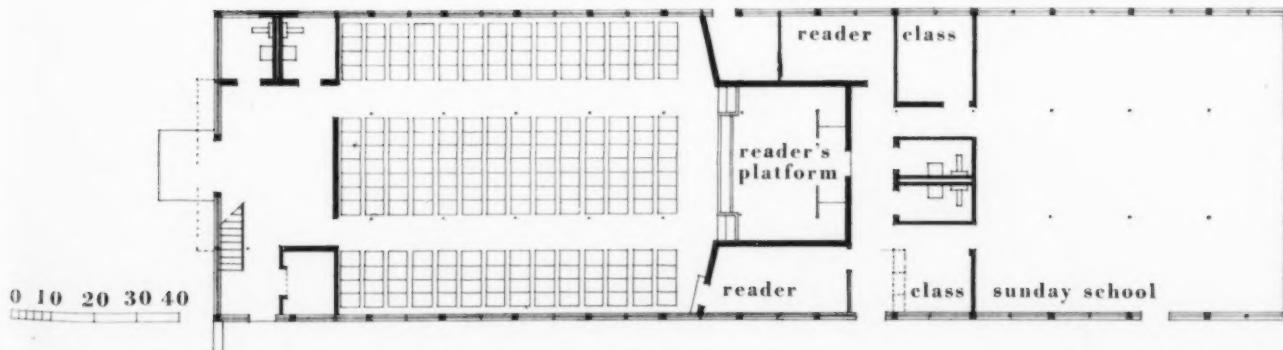
First Church of Christ Scientist, Victoria, Texas

Milton A. Ryan, Architect
 R. Marvin Shipman, Structural Engineer
 Walter E. Bowden, Builder

THIS CHURCH, top award winner in the "Texas Architecture—1953" exhibition, is a splendid example of how common materials, structural ingenuity and good design can be combined to produce an attractive result at low cost. The three principal materials employed are common brick, glass and wood. The columns are the only surfaces painted. The resulting interior achieves a quiet, simple dignity quite in keeping with its use.

The construction, as described by Architect Ryan: "First, the slab containing radiant heating pipe was placed, then the 3 in. columns were set, the wood beams erected (these are 2-2 x 10s), roof deck laid (2 x 6 T&G plank), and roofing applied. When the slab was dry, brick was erected in one operation, openings were glazed, doors hung, and the building was virtually complete."

RELIGIOUS BUILDINGS



RELIGIOUS BUILDINGS



A preference of the creed is for a sounding board to be placed to deflect the readers' voices forward; this inspired the idea of sloping the entire ceiling structure both forward and upward



Utric Meisel—Dallas



*W. Stuart Thompson and
Phelps Barnum, Architects*

*Partner in Charge:
Edwin A. Horner*

*Structural Engineers:
Severud-Elstad-Kreuger*

Joseph W. Michay



AIR TERMINAL AND FIELD CIRCULATION SOLVED

*Mechanical Engineers:
Jaros, Baum & Bolles*

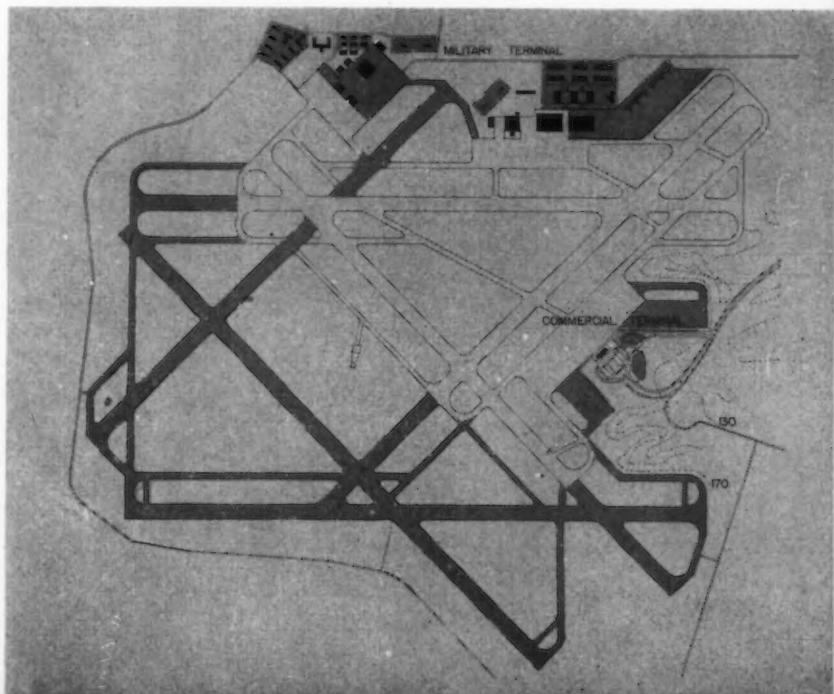
*Electrical Engineers:
Smith & Silverman*

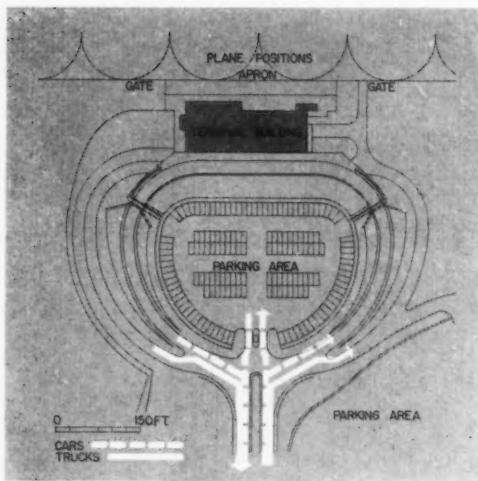
*Landscape Architect:
Alfred Geiffert, Jr.*

*Consulting Engineer:
John J. Mozzochi*

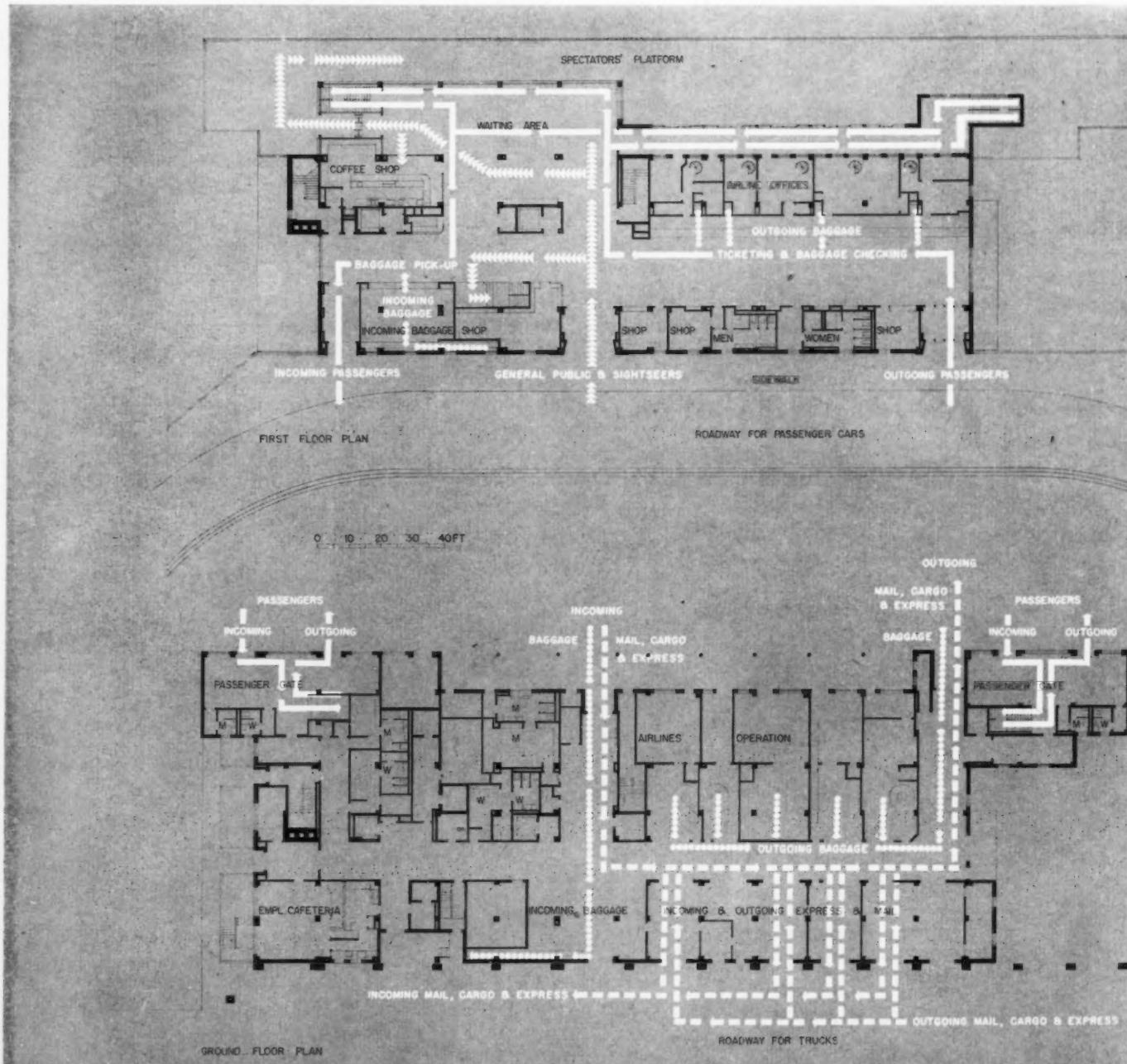
BRADLEY FIELD, AT WINDSOR LOCKS, CONN., is a former military airfield and training base. In 1948 the Federal lease on its 1600 acres expired; it was returned to the State of Connecticut; and shortly work began, in a series of planned stages, on converting the facility into what will eventually become a Class V, express-service, dual-runway airport, with a civilian terminal for local and transocean passengers and air freight; maintenance hangars, shops, etc.; and provisions for the Air National Guard. The civilian terminal, now in operation, serves Hartford, Conn. and Springfield, Mass. The Connecticut Aeronautics Commission initiated the program. Both the long-range master plan for the airport and the two-level terminal were designed by the architects.

Master plan, right, shows eventual and present development. North-south runway is normally used most; passenger terminal (top of page) is located to eliminate cross-traffic of taxiing planes and separate military and commercial traffic. Maximum use was made of existing facilities





OF 1
MURPHY TERMINAL, named for Francis S. Murphy, Chairman, Connecticut Aeronautics Commission, is a "two-level" terminal. That is, people enter at an upper level via the upper roadway of a double-decked entrance drive; baggage is chuted to the lower level where it joins air mail, cargo and express, which enter via the lower road. Several floors of offices and equipment, above and below, culminate in the control cab. Site of the terminal, left, was in regular and easily adapted to the two-level scheme. Note ample room for parking spaces, present and future; and tunnels under drive, permitting people to reach upper level without crossing traffic.



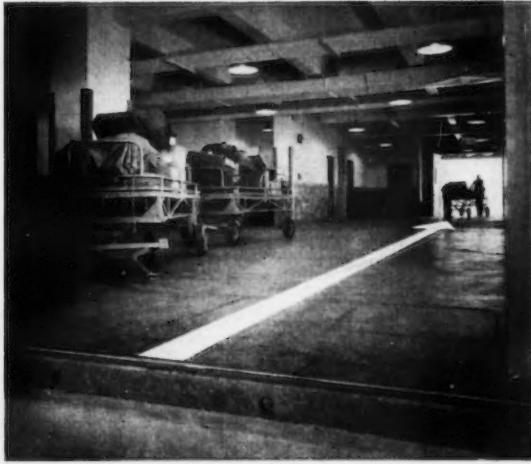
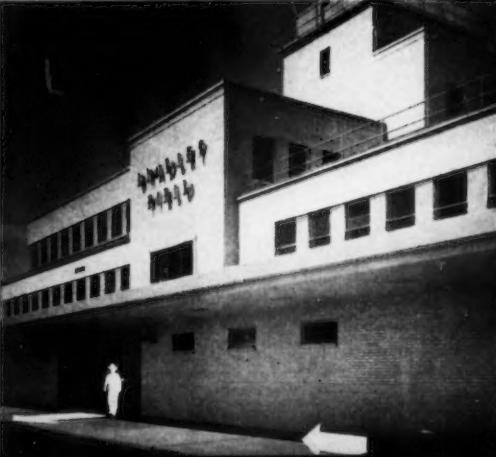
MURPHY TERMINAL, BRADLEY FIELD, CONN.

OF EMPLANING PASSENGERS (three photos directly below): top, entering building must pass through and baggage-checking counter. Center, he proceeds through lower level. Bottom, he descends to one of three closed, field-level waiting rooms as in necessity for this climate. More rooms can be added. Visitors drives not enter ticketing area.

ROUTE OF DEPLANING PASSENGERS (three photos center, below): top, passenger coming up through waiting room passes through lounge and center lobby area directly to baggage pick-up desk (center photo). His baggage arrives here by conveyer from floor below. Having gotten his baggage, passenger goes out, waits under marquee (bottom) for conveyance to destination.

BAGGAGE, MAIL, CARGO, EXPRESS are loaded on planes (and unloaded) from the lower level only. Photos below show: top, baggage coming down by chute and being trucked out to field; center, direct route of mail, cargo, express from truck dock through building to field; bottom, one-way traffic on the truck roadway. Careful organization of all traffic assures smooth operation.

Joseph W. Molitor





Roger Sturtevant

NEW CHAPTER IN STORES STORY

JOSEPH MAGNIN STORE IN STONESTOWN

DESIGN OF LUXURY STORES and shopping centers by the Welton Becket office has come to be a modern success story. This Joseph Magnin store is the latest of a group that includes Bullock's Pasadena, Bullock's Westwood, in southern California, Stonestown Shopping Center, and Hillsdale and Stanford shopping centers. This latest product inevitably takes on the added significance of considerable momentum in store design and decorating. Incidentally, the architectural group executed the interior design and decor including all furnishings, fixtures and appointments from ash stands to monogrammed wallpaper.

The building, of reinforced concrete with exterior facing of Travertine, consists of a main floor, basement and mezzanine. All merchandise deliveries are made through a tunnel which terminates at a truck loading dock adjacent to the store's basement.

One of the interesting features is the dual-purpose display and selling rooms, of which there are four. During the selling hours these rooms serve as sales and fitting rooms; in the evening a series of sliding doors converts them into sidewalk display rooms.

While the building is contemporary in concept and expression, there is no dedicated dogma in it. One of the display-selling rooms, for example, is done in "fantastic Victorian," another in "Louis XVI." Interiors throughout the store exhibit wide variety of styling and a good deal of glamorized grandeur, all carefully calculated to capture feminine interest and to arouse that never-underestimated power of a woman.

Branch Store for Joseph Magnin

Stonestown, San Francisco

Welton Becket and Associates

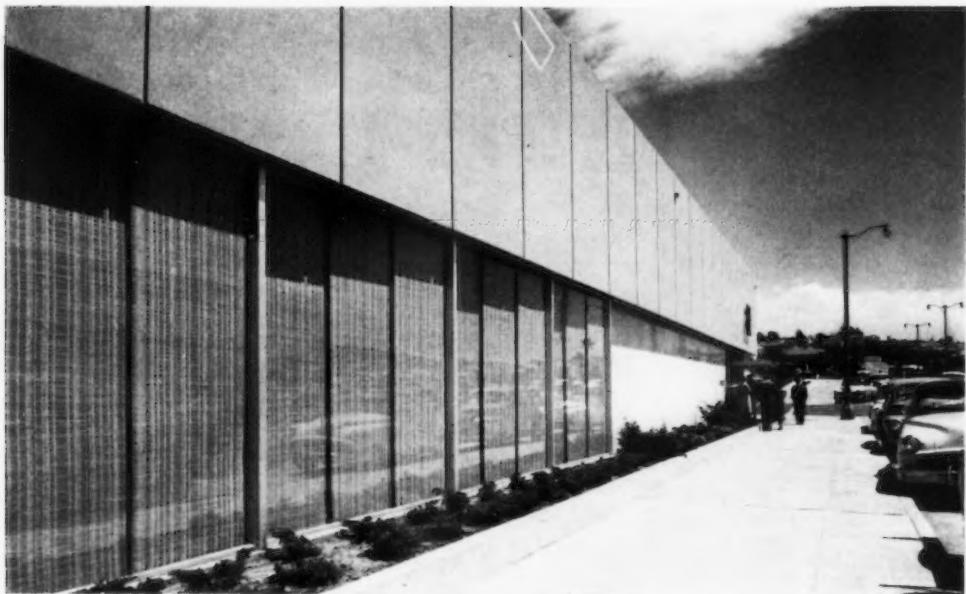
Architects

L. F. Robinson

Structural Engineer

Deane & Hill

Mechanical Engineers



*Sidewalk frontage is used for display purposes only at night.
In store hours the spaces are curtained off for sales rooms*



Lower walls are of Travertine marble; upper walls in painted concrete with wide grooves delineating a modular pattern



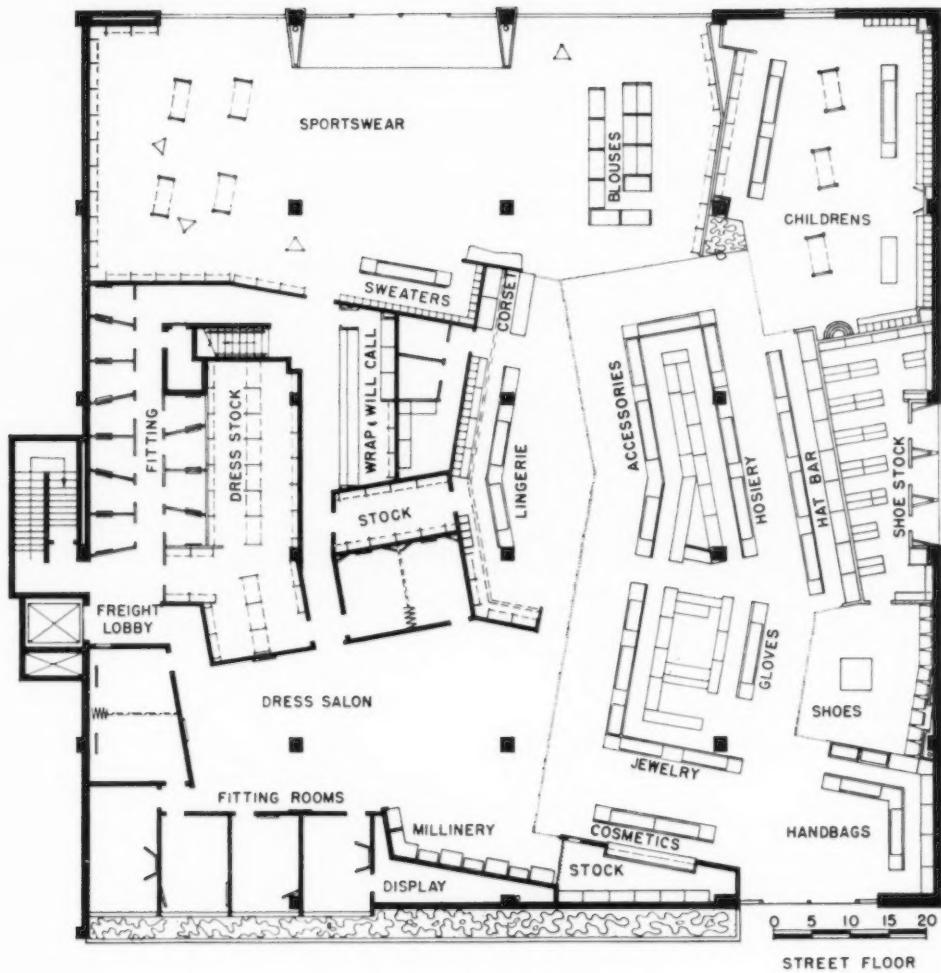


JOSEPH MAGNIN STORE

Welton Becket and Associates



Large entrance canopy gives store identification in the shopping center without the usual huge sign. On the wall facing parking lot the sign is also restrained but still has sufficient prominence on the sheer wall



JOSEPH MAGNIN STORE

Weldon Becket and Associates

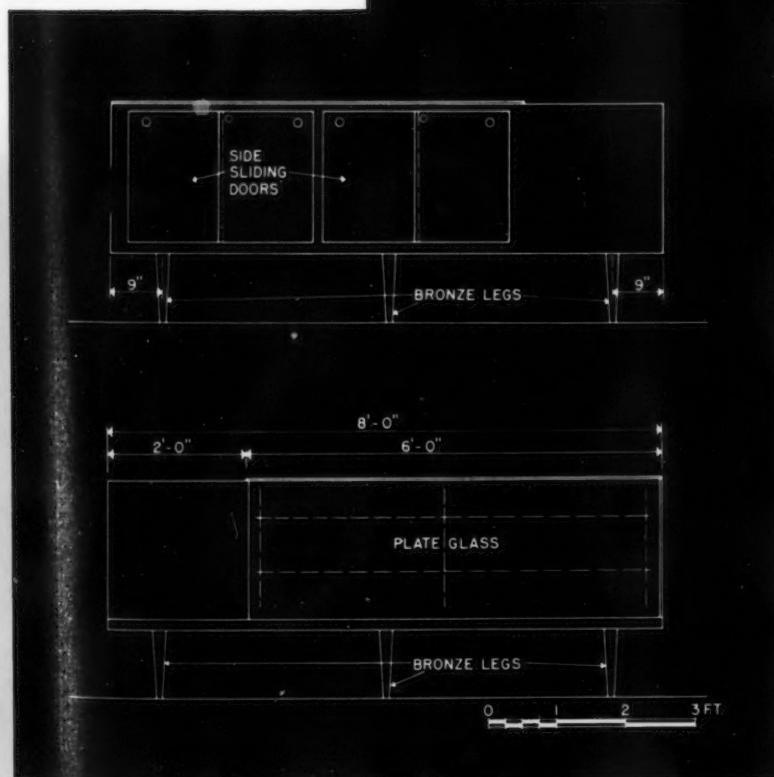
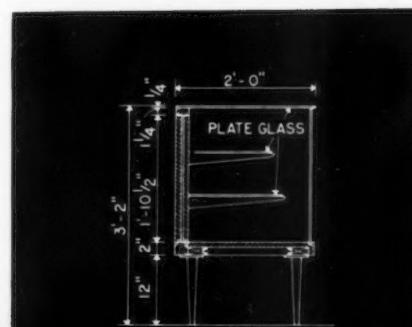
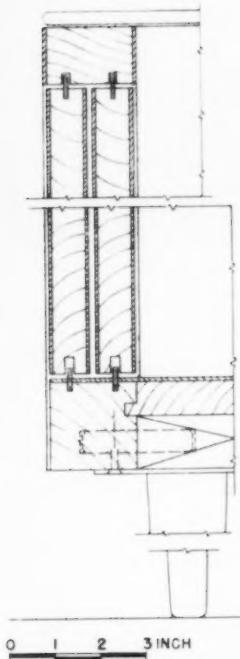


ARCHITECTURAL INTERIORS

Design | *Details* | *Materials* | *Equipment*

Roger Sturtevant

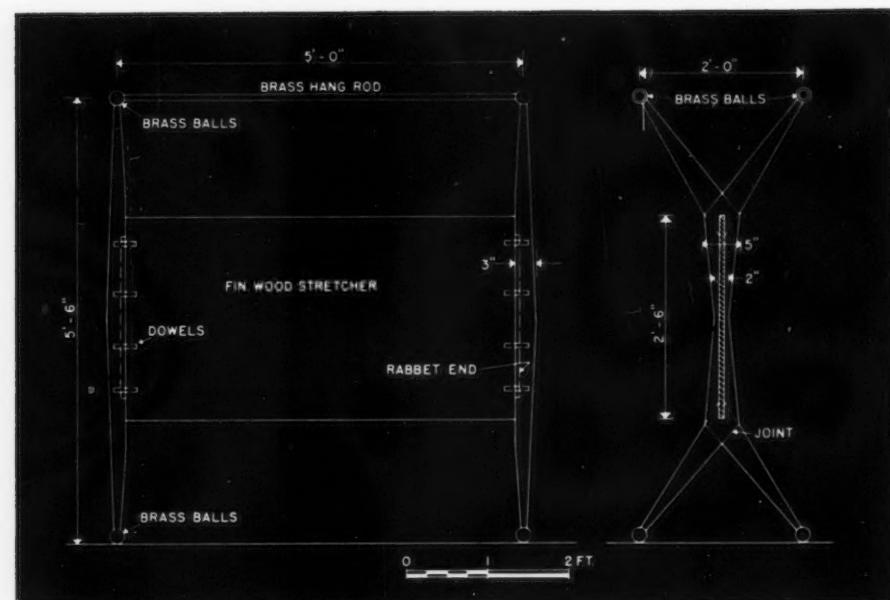




*Cosmetics department (above) uses typical open-end showcase detailed at left, also recessed wall case. Mural above case is done in cast fragments in *entarsia* and *scraffitto*, by Mary Bowling. Hat bar (top of opposite page) is just about the longest straight line in the store. This and view below it show typical lighting, also the pattern of terrazzo floor*

JOSEPH MAGNIN STORE

Weldon Becket and Associates



Sportswear (opposite page, top) is largest area, has Danish cork floors and specially designed hanging racks, shown in details. Children's section (bottom of opposite page) uses smaller version of this rack, has carpeting of honey colored wool grospoint. Note, in background, Victorian bear hat rack for window display



ARCHITECTURAL INTERIORS

Design | Details | Materials | Equipment

Roger Sturtevant

This page, top corner: booths in credit department on mezzanine floor. Above: main entrance doors are of glass in aluminum frames. Interior walls in plaster, wood or cork, in various colors in different departments. Right: carpeted flooring helps to delineate sections



JOSEPH MAGNIN STORE

Wellon Becket and Associates



ARCHITECTURAL INTERIORS

Design | *Details* | *Materials* | *Equipment*



Dress salon (above) has wallpaper designed by the architects with JM monogram pattern, in gray on tan, or tan on gray. Chairs are Italian, covered with thabok silks from Siam. Love seats have Indian silk tweed covering. Shoe department (below) has Danish oak chairs, hassocks covered with striped fabric designed by the architects

Shown here are the dual-purpose display and fitting rooms — display windows at night, sales rooms by day. Here the architects pulled out the stylistic stops. One (right) is modern, with blue glass cloth wall covering, plastic table, collage on wall. The one at the bottom of the page is called fantastic Victorian, and George Wright, designer in charge, had fun in the antique shops picking up the wicker furniture and the whatnot. Another fun-and-games item is the Cupid chandelier. Sofa here, as in the other of the four rooms, is in thaibok silk

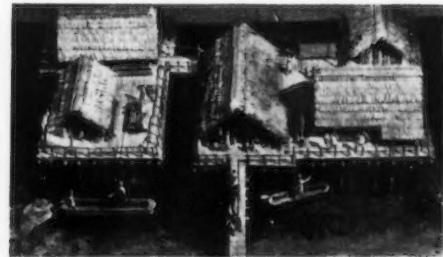


Roger Sturtevant



FREEDOM IN HOUSE DESIGN

Ingeniously handled structure contributes to the familiar open interior



Top, Swiss Lake Dwelling; center, Iroquois Indian Long House; bottom, left, Mandan Indian Earth Lodge; right, Eskimo snow house. Photos courtesy N. Y. Museum of Natural History

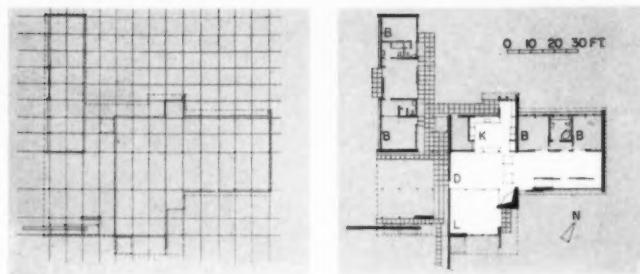
HISTORICALLY the design of houses has been a search for economical ways to enclose space of maximum utility, to afford protection from climate and to use available materials appropriately. Generally speaking, until the time of the Renaissance — which of course persists today in reminiscent "Colonial" derivatives — structure was unashamedly exposed. The most obvious examples may be the primitive structures shown above; but in French chateaux, Italian palazzi and Tudor mansions, which were neither primitive nor unsophisticated, what held the building up was satisfactorily visible.

At one time, perhaps, a desire for something more genteel, or the need to cover up poor workmanship, led to the concealment of structure; and nowadays there is complex, usually ugly mechanical equipment to worry about. Whatever the reason, the habit of hiding strength has gripped us strongly and is being broken only slowly. Another custom, too, is changing as we begin to realize what modern structural techniques can

accomplish: the concept of each activity area in the house as a separate cube, which may have originated in the necessity of employing many interior bearing walls, is disappearing.

No doubt these changes are being accepted by the public partly because they have been touted as economy measures; through them an owner can "get more house for his money." Economies they decidedly can become, as experience with the telescoped interiors of the average builder's house demonstrates. It is doubtful, however, if that is a really important reason; the great architects have always employed wisely the elements which, assembled, form an orderly, beautiful structure. In the following seven examples there are few designed by architects whose names are widely known. Most of the houses are unpretentious; but to some degree all display this common characteristic: the construction of contemporary American houses is again becoming satisfactorily visible.

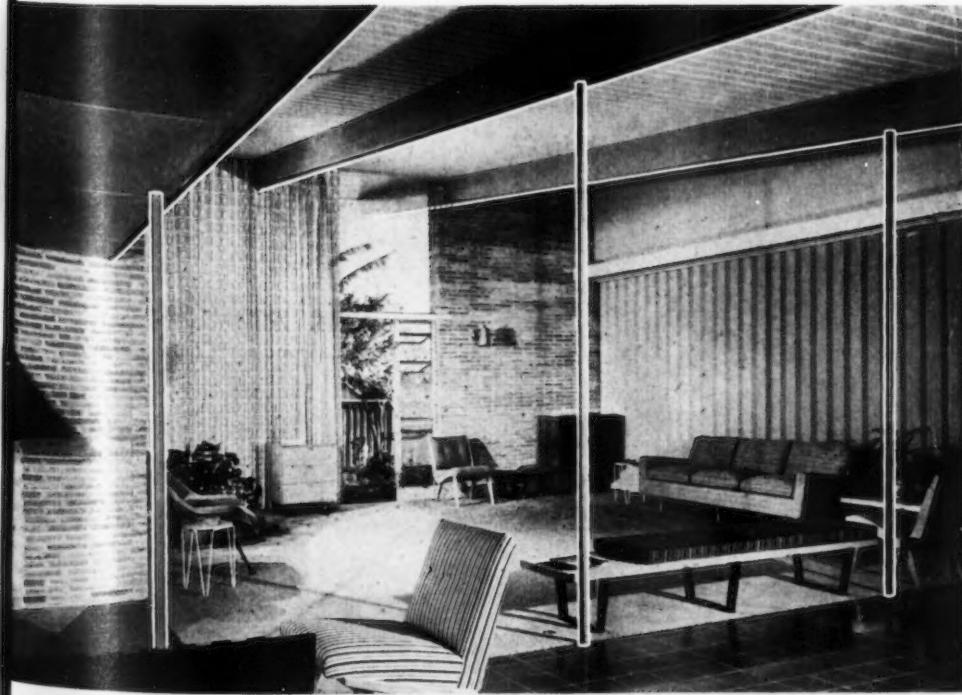
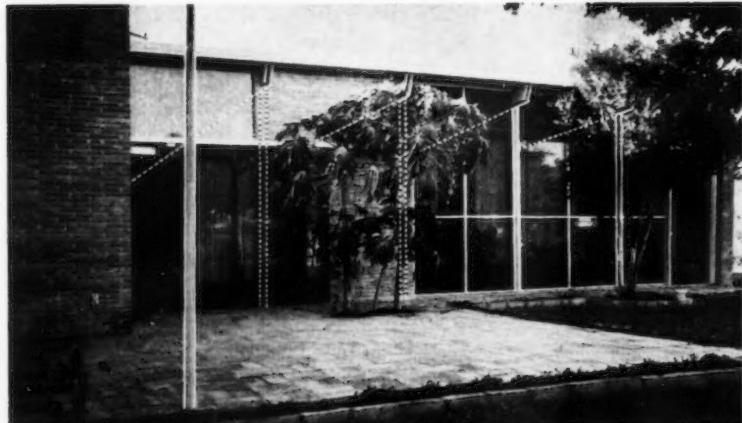
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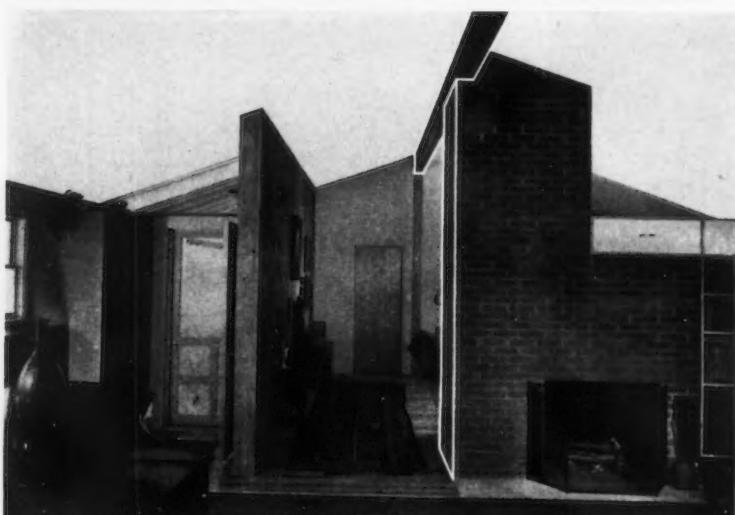
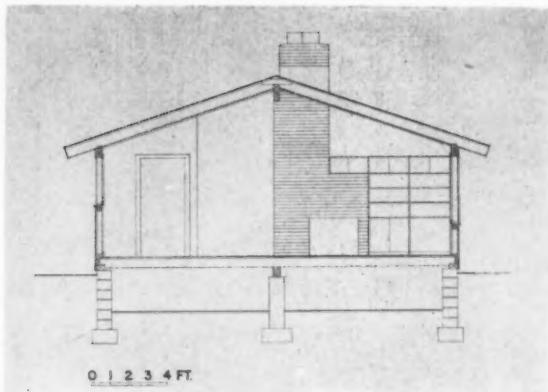
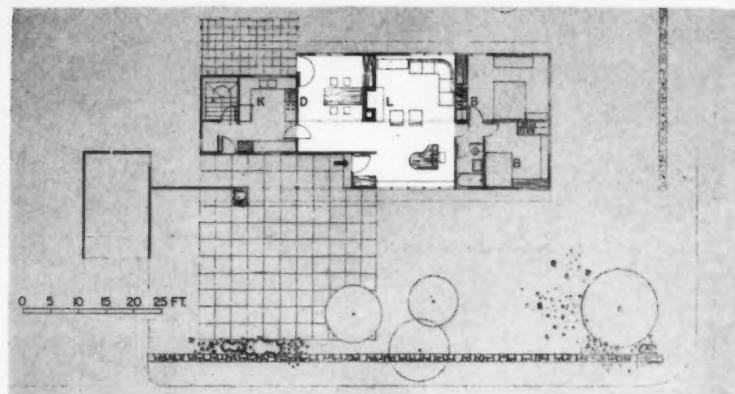
STEEL POSTS, WOOD BEAMS AND DECK

McKelvey House, Harlingen, Texas

Cocke, Bowman & York, Architects, have used slender lally columns in 7-ft-wide bays to which are bolted paired wood beams supporting an insulated wood plank roof. Variations in height not only emphasize parts of the open interior but also admit light through shaded clerestories. In addition, skylights (between dining and porch), casework (between kitchen and dining) and changes in floor surfacing, help define areas. Structural bays vary in length from 14 to 21 ft; many of the thin columns are exposed in both bedrooms and living areas.



Ulric Melsel



Joseph W. Molitor

2

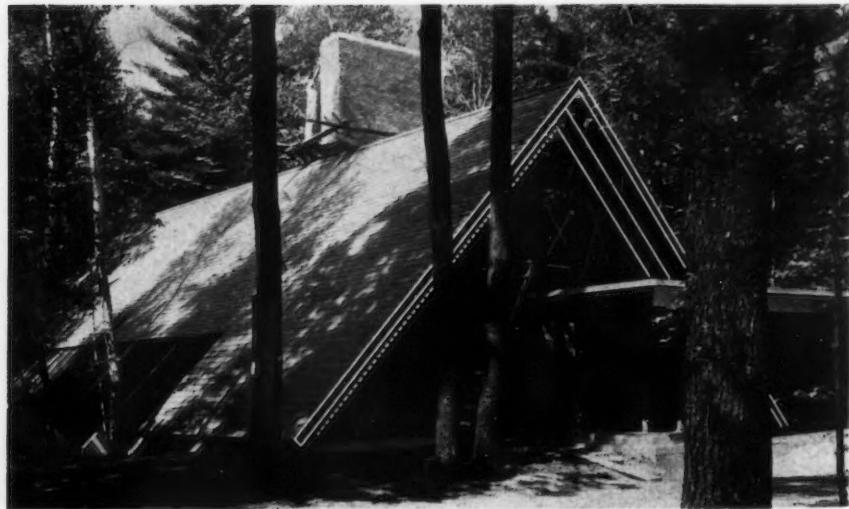
WOOD BEAMS AND GIRDER

Golbin House, Bennington, Vt.

Bernard Kessler, Architect (left and above) and Alden Dow, Architect (below), both have developed the familiar pitched roof in ways which, though not new, are departures from average practice. In the Golbin house the roof framing, pitched low and supported by a ridge girder over the open dining-living area, had to be figured as a series of beams; with thrust eliminated, collar beams could be omitted and simple ties at the ridge used instead. Alden Dow's apparently simpler solution, among whose forbears are the pre-Roman-arch structures of stone slabs slanted against each other, requires heavier framing lumber and could be considered less economical in terms of cubage.

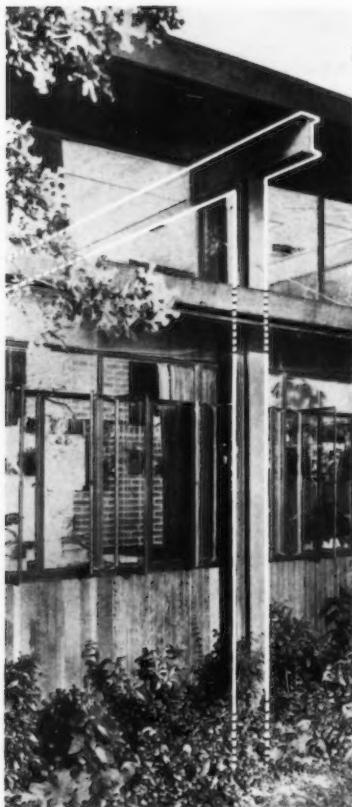
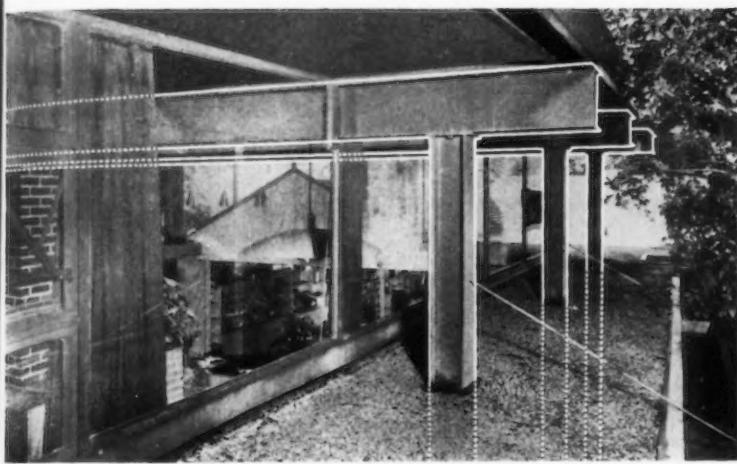
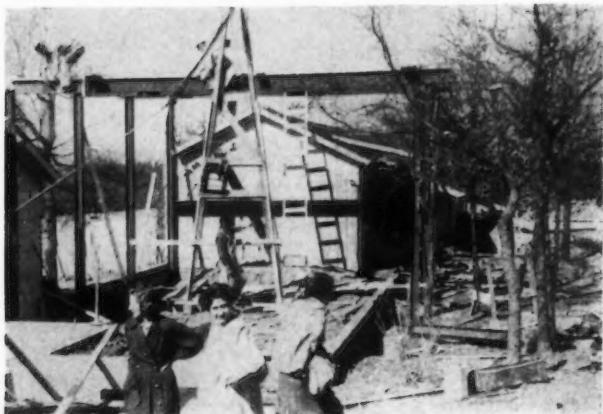
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WOOD WIGWAM Midland, Mich.



4

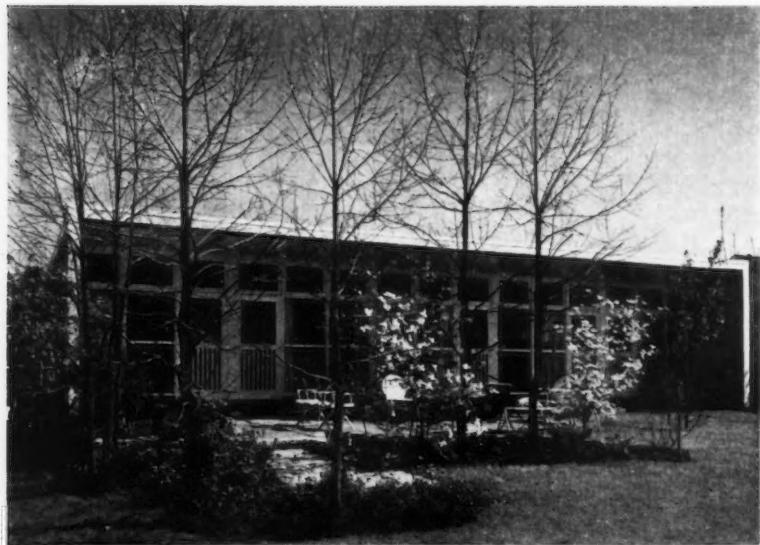
STRUCTURAL STEEL, EXPOSED

House in McAlester, Okla.

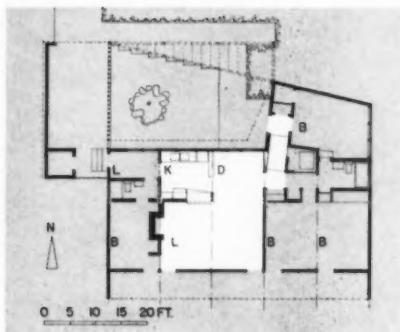
Vahlberg, Palmer & Vahlberg, Architects. This house incorporates an extensive addition to an existing, rather nondescript dwelling (photo at top, right). In order to obtain the freedom desired in the addition, steel columns and beams were employed. These support roofs and overhangs; the walls proper — hardly more structural than movable partitions — sit well inside the columns. Living and kitchen areas (photo bottom, right) flow into one another, and in the ample height of the kitchen the steel frame is visible though unobtrusive.

A. Y. Owen





Joseph W. Molitor



5
**WOOD POSTS,
 BEAMS, PURLINS**
**McKinnie House,
 Memphis, Tenn.**

Eason, Anthony, McKinnie and Cox, Architects. A line of partitions and built-in cases down the center of the plan contains a series of 4 by 6 in. posts which support the main roof beams; these in turn carry light wood purlins. Air supply ducts also follow the central spine. Emergency restrictions on materials when the house was built influenced plan and structure.



Joseph W. Molitor

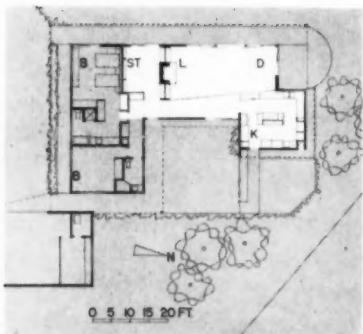
6
**BOX ON
 CONCRETE FRAMES**
**Walton House,
 Daytona Beach, Fla.**

Francis Walton, Architect. The site is a dune, somewhat inland from the beach. Elevated on a series of cantilevered concrete frames to improve the view, the house is a simple, open box, cross-braced by interior partitions and with only entrance and service area below.

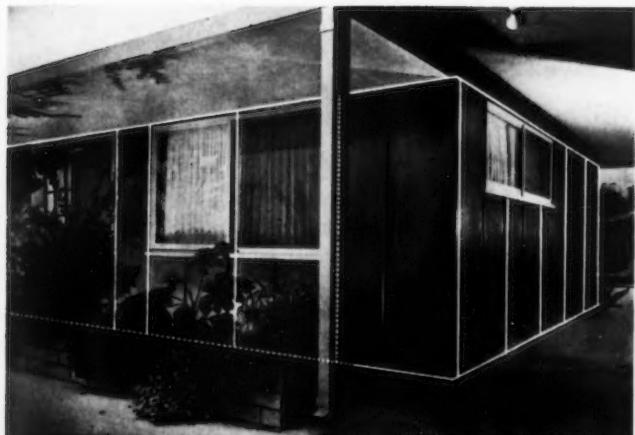


Jack Holmes

MODULAR STRESSED PLYWOOD, WOOD FRAME

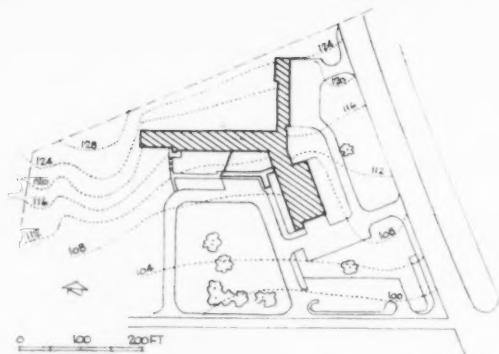
Bryce House, Fillmore, Calif.

Chalfant Head, Architect. The wood frame, covered with stressed plywood panels 4 ft wide, has studs 2 ft on centers. A 4-ft module determined the plan. Construction is drywall with an acoustical ceiling covering the heavy beams which span the open living areas; these are partially subdivided by non-structural casework. The glass wall, oriented to a southwest view, has large sliding sections which unite the free interior and the outdoor terraces.



Robert C. Cleveland

ADVERTISING AGENCY GOES SUBURBAN

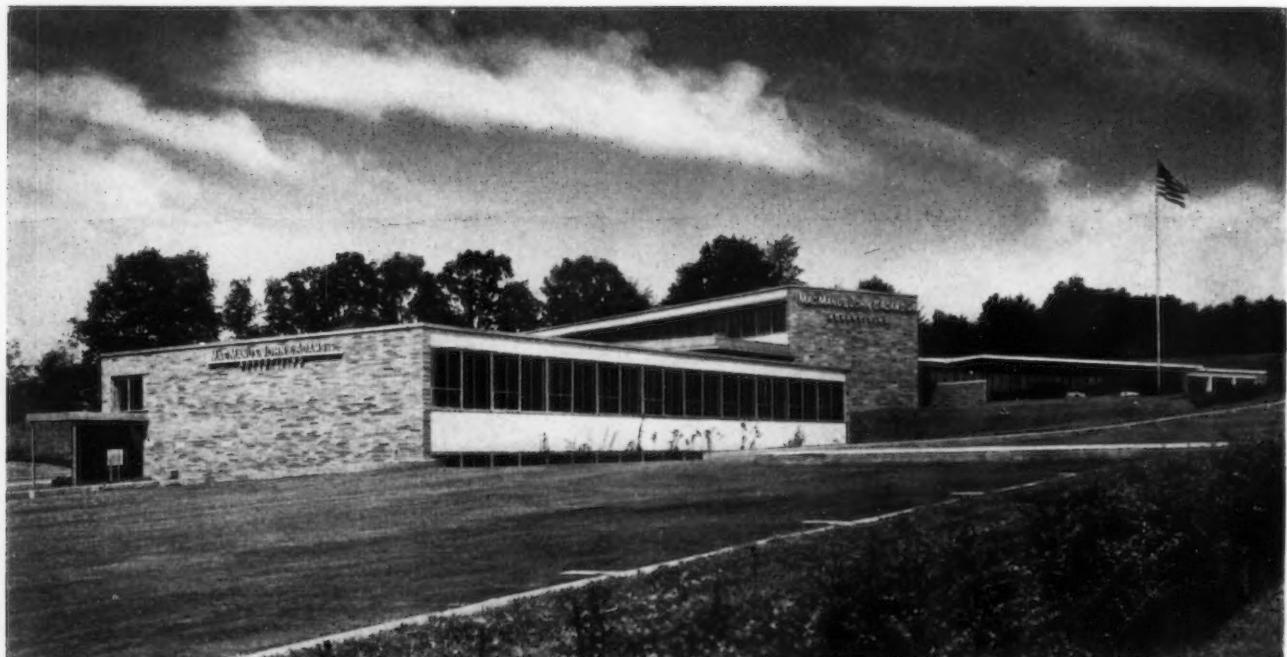


Offices of MacManus, John & Adams, Inc.

Bloomfield Hills, Michigan

Swanson Associates, Architects

Wilcox & Laird, Landscape Architects



Richard Shirk

No parking problem here: 4-acre site permitted wide driveways, parking area, carport, and garage (extreme right in photo above). Main entrance and lobbies are at base of open V formed by building's two wings (below)

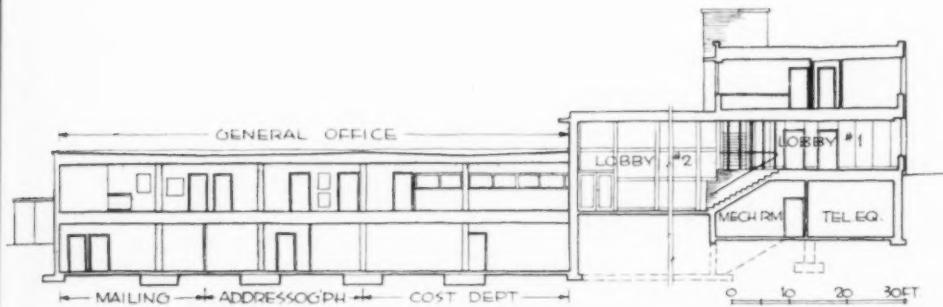


URBAN—AND LIKES IT

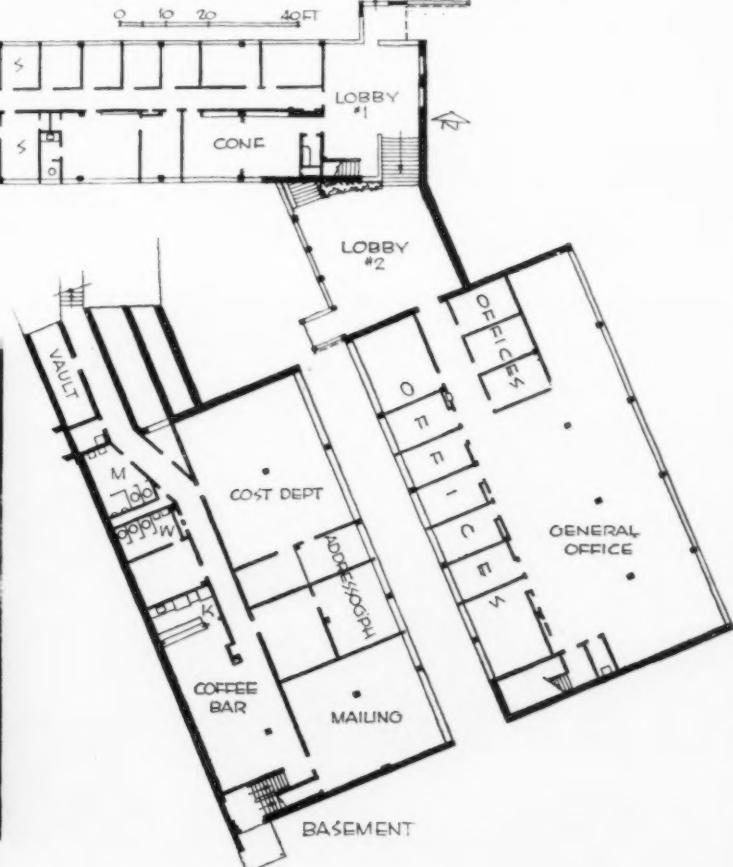
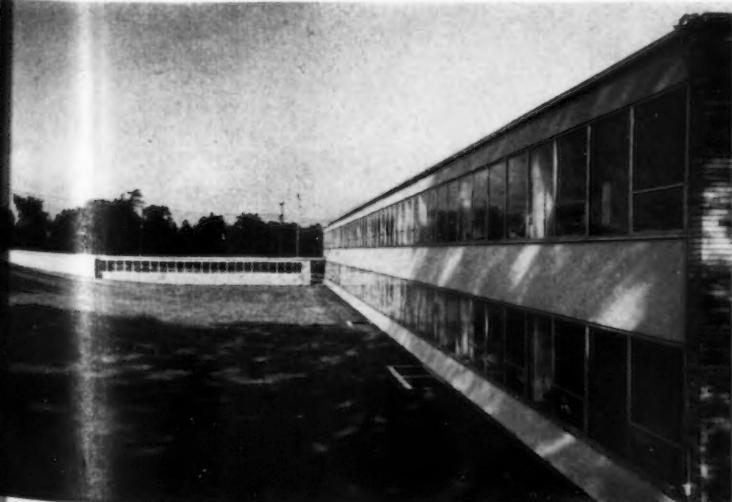
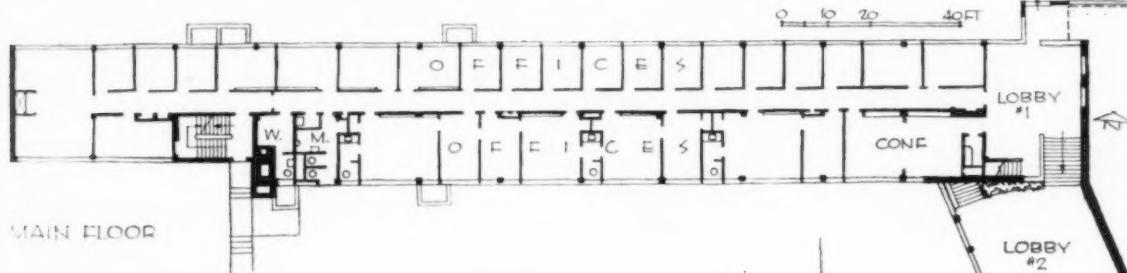
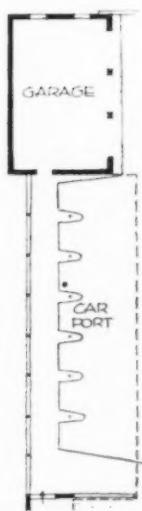
LONG BEFORE THE GOVERNMENT began to urge decentralization as a defense measure, business and industry were eyeing the suburban magnet of lower land costs, lower taxes, and more room. Here and there a firm yielded to the magnetic pull, with varying results. The suburbs grew (as they would have grown anyway), department stores opened branches to serve the increasing population, and shopping centers began to sprout. Outlying villages became small cities, but the bustling metropolis continued to bustle. The fact of the

matter seems to be that business and industry can thrive equally well in or out of the city, given a sensibly-chosen location.

It is still news, however, when a large advertising agency moves its headquarters to a site some 25 miles from the center of the nearest city. MacManus, John & Adams had had its offices in Detroit's Fisher Building for a quarter-century when it pulled up stakes and moved out to Bloomfield Hills. The agency had grown so much since the end of World War II that it needed



Building was planned to separate functional and creative departments. One wing houses accounting, media, etc. In the other the production department occupies the lowest level where it is most accessible to its many visitors; the two upper floors accommodate administrative offices, account executives, copywriters and art departments. Every creative worker has a private office; art departments have north light



ADVERTISING AGENCY GOES SUBURBAN



Richard Shirk

Two-level main lobby has floors and stairs of Vermont slate, large windows of insulating glass. In east wall, near stairs, are two small slabs of limestone from old White House in Washington. Below: offices for copywriters and layout men have specially designed furniture and sound-deadening perforated cement board partitions



almost 50 per cent more office space, which simply was not available in the Fisher Building. The logical thing to do, the agency decided, was to build its own quarters. But where? High land values in the city proper would necessitate a vertical structure, which meant high building costs. A suburban site would make possible a more convenient horizontal building, less expensive to construct and easy to expand—but would a suburban site be practical?

Various sites in and around Detroit were considered before the Bloomfield Hills location was suggested. At that point a survey of agency personnel uncovered the encouraging fact that 65 per cent of the employees lived north of the city limits, in the general direction of Bloomfield Hills. Even more encouraging, many of the firm's major clients were situated north of the city. Offices in that area, it was estimated, would save agency principals as much as 80 minutes a day in travel time and would result, all clients queried agreed, in improved client relationships and in increased operational efficiency. The suburbs had won.

The site selected consisted of about 19 acres, only four of which would be occupied by the agency (the balance was restricted to residential use). Several building placements were possible, and one in particular—the one chosen—not only would permit the future addition of a whole new wing (now already in the planning stage), but also would take full advantage of the expected business expansion in the vicinity.

An early concern about necessary services quickly vanished: automatic telephone switchboard service was available; a teletype and a teleprinter were installed; the Bloomfield Hills Post Office just across the street was increased in grade and proved able to handle the heavy mail load. Printers and other suppliers banded together to employ a Detroit delivery service which makes four round trips daily between a central warehouse in the city and the agency offices. A leading art studio has opened a branch office to serve the agency, and in the same building a new photographic and photostat studio has been established.

There has been almost no turnover in personnel because of the move; on the contrary, the lighter, airier and roomier quarters have resulted in a noticeable lifting of spirits and a greater communal feeling among employees. Tardiness has been almost eliminated. The agency is glad it made the move.



Interior trim is white birch, floors are asphalt tile, ceilings acoustical plaster. Overhead fluorescent lighting was designed to eliminate shadows, need for desk lamps



Move to suburban site permitted unusual spaciousness in every section of building, including general offices and corridors. Executive offices are luxuriously large



STUDIES ON NATURAL LIGHT AND VENTILATION IN SCHOOLS

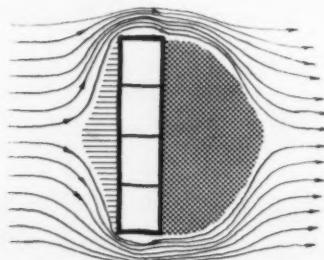
Condensation of a chapter from a forthcoming book to be published by F. W. Dodge Corporation

by William W. Caudill

EACH ENCLOSURE (or envelope) for classrooms provides a particular environment in terms of heat, light and sound. But there are an infinite number of possible arrangements, shapes and constructions of walls and roofs for the envelope. So the school planner cannot help being troubled by the difficulty of selecting a combination of structural elements that will give an optimum environment, particularly when he considers that each solution greatly depends on local conditions (location, size and contours of the site; weather; location and proximity of surrounding buildings, fences and trees; availability of certain materials; budget limitations; and a great many other factors).

Answers are needed to such questions as: Where should windows be located, and how large should they be? What effects do overhangs have on light and air flow? How do landscaping elements affect daylight, air flow and sound?

For answers to these questions, the Texas Engineering Experiment Station started an architectural research project in 1949, the research team consisting of architects, physicists, a landscape architect and an aeronautical engineer. Most of this article is based on their tests.



Above: wind flowing past a building sets up a high pressure area on the windward side and low pressure on the leeward side (called wind shadow)

Right: maximum air speeds within a building are achieved when the outlet is larger than the inlet. This is analogous to a lake (which never seems to move) flowing at a high velocity over a spillway

How Air Behaves Within a Classroom

In order to show the behavior of air flow within classrooms let us assume one set of conditions as in Case 1 across page, left. Then, by changing the individual parts, we can see the corresponding changes in air flow pattern. By virtue of the solid area at "a," combined with the ground, there will be a strong upward pressure which will cause the incoming air to flow towards the ceiling.

The next Case shows what happens to the interior air flow when an overhang is added at "b." The addition of the overhang causes the air to flow downward because of the higher pressure above the opening than below it.

Now consider Case 3. Everything is the same as 2 except the inlet opening has projected type sash "c." The air now shoots upward.

Case 4 is exactly the same as 3 except that the outlet has been changed from the ceiling to the floor. Note that the pattern across the room is essentially the same. It is the inlet that determines the air flow pattern, not the outlet.

In Case 5 the overhang has been removed and the inlet has been lowered on wall "e." The opening has no vanes. The air flow pattern is downward, caused by the air flowing along the large wall area "e" which gives the air a strong downward component when it enters the opening.

In Case 6, an overhang "f" has been added immediately over the opening, similar to the sun shades in typical glass block fenestration. The overhang stops the downward component and the air flow is upward again. But if a louver type arrangement is added at "g," Case 7, then the air can be made to flow downward again. Now if the louvers are removed, Case 8, the air flow still is up-

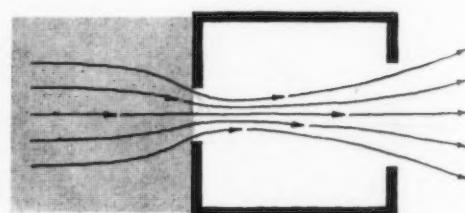
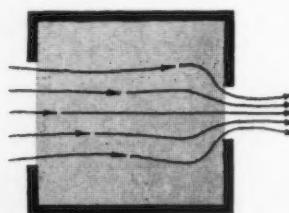
ward regardless of whether the outlet on wall "h" has been lowered.

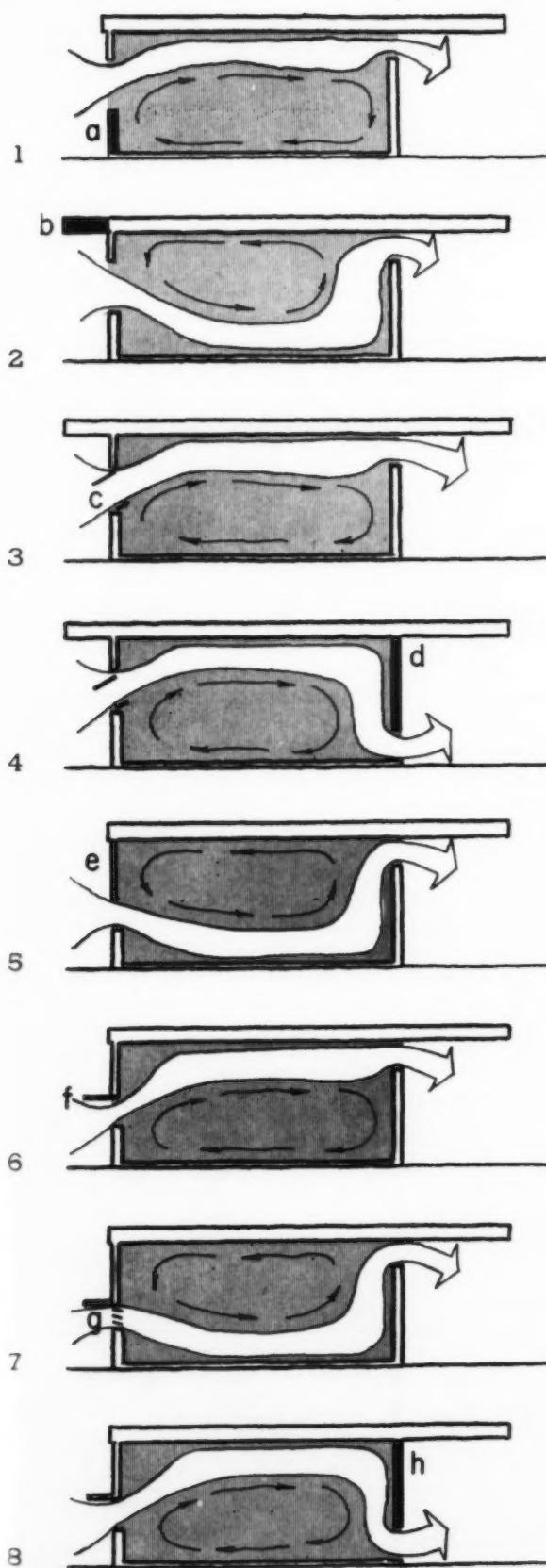
How Light Behaves Within a Classroom

The cross-sectional diagrams at right across page show how light behaves within a classroom when certain shapes, materials, and reflectivities are changed. First, let us start with a unilaterally lighted classroom in Case 1. The window at "a" allows a certain quantity of light to enter the room giving an illumination curve as shown. Now look at Case 2. Here the reflectivity of the ceiling "b" has been substantially increased. The distribution curve flattens out somewhat, since the increased reflectivity does the most good near the windowless wall. The dotted line is the original light curve.

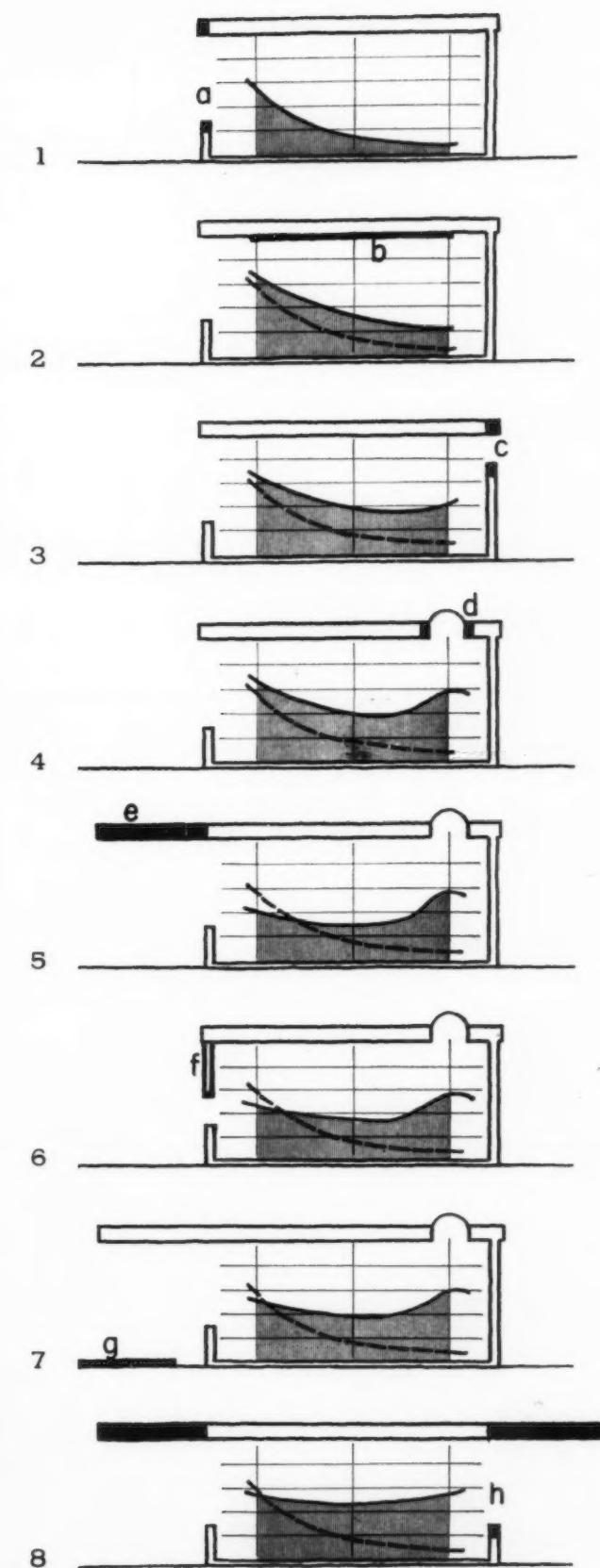
Let us now assume that the illumination needs to be brought up near the windowless wall still more. What can we do? For one thing we can introduce an opening at "c" in Case 3. Another way is to install some sort of skylight, as "d" in Case 4.

Next assume that we need to straighten out the illumination curve still further. One way is by providing an overhang "e" as in Case 5. Another way is by introducing some material like glass block or a device like louvers at "f" as in Case 6. At this point, assume that although we straighten out the curve somewhat, we would like to increase the intensity a little bit more. By increasing the ground reflectivity at "g" the light within the classroom will also be increased somewhat, see Case 7. As a final experiment, assume that we want a high level of illumination, evenly distributed. One good way is to open up both sides, then to install overhangs.

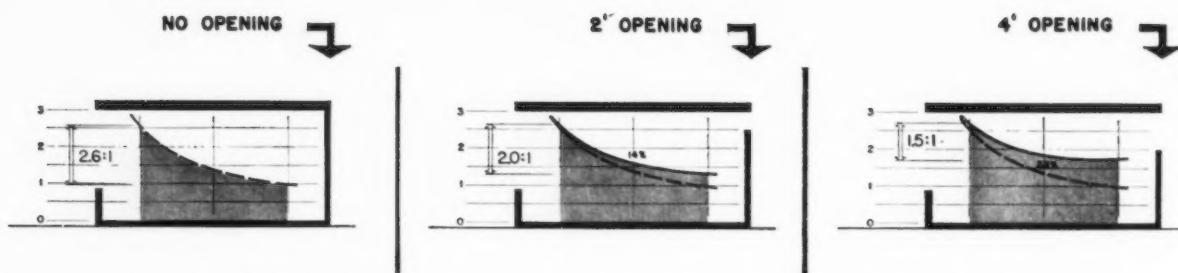




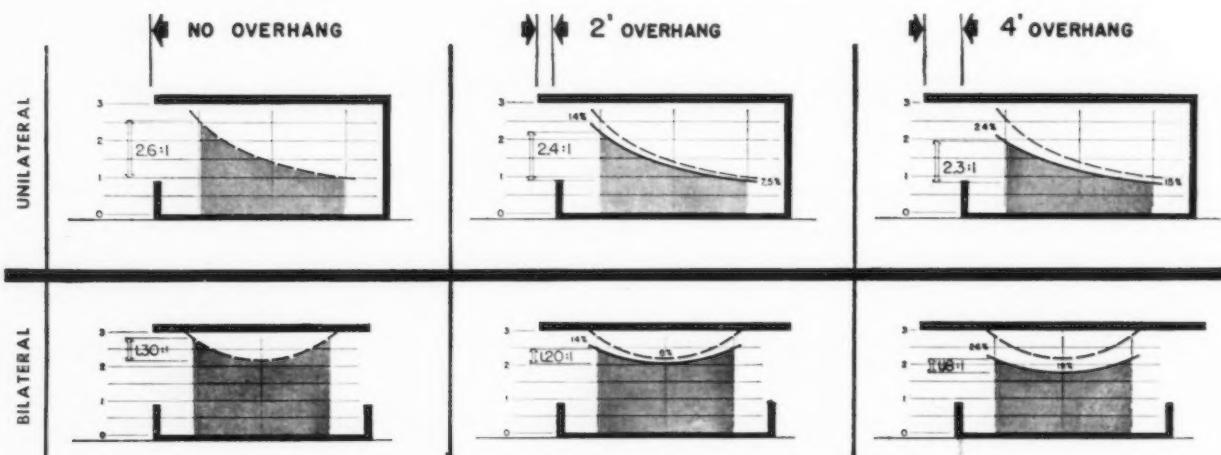
VENTILATION: in the examples above, room shape is kept constant, but window sizes, types and locations are varied, and in four cases overhangs are used on the windward side to demonstrate their effect on natural ventilation



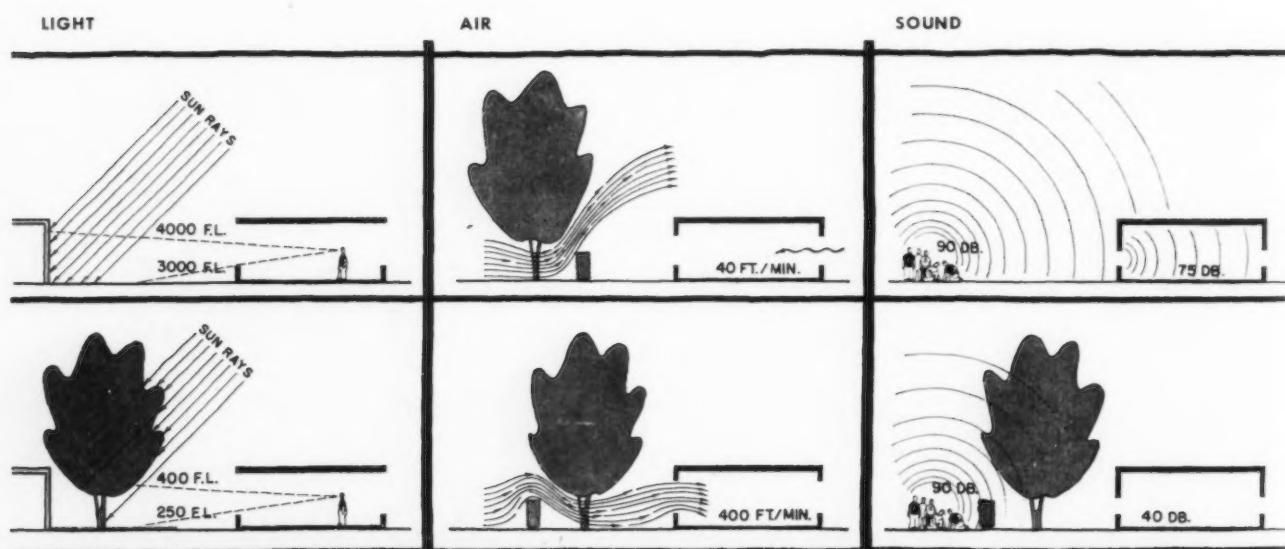
DAYLIGHTING: as with the examples on ventilation, the room shape is constant, but fenestration, surface reflectances and overhangs are varied to show how illumination can be increased and evened. Dashed curve is that of Case 1



EFFECT OF BILATERAL DAYLIGHTING: a study of these diagrams will show that if a classroom has large windows on one side, supplemented by smaller ones on the other side, intensity is increased and illumination is more even. Small numbers are increases in illumination; larger numbers are the ratio between maximum and minimum; dashed curve is the illumination from the first case



EFFECT OF OVERHANGS ON UNILATERAL AND BILATERAL DAYLIGHTING: these studies show that with unilaterally lighted classrooms, overhangs may decrease intensity seriously, although illumination is more even. With windows on both sides, however, distribution is improved and light is decreased only slightly. Numbers are used as in the top illustration to indicate the degree of change in illumination



EFFECT OF TREES ON LIGHT, AIR AND SOUND: the top left sketch shows excessive brightness caused by reflections from an adjacent building and a paved area; in the sketch below, trees and grass have remedied this. The two center sketches show how location of trees and a hedge can help or hinder natural ventilation. The two right sketches show they can reduce noise

PROTECTING WOOD FROM DECAY AND FIRE

A survey of what materials are used and how they are applied

By George M. Hunt*

WOOD, when it is properly used will give good service for centuries. This is exemplified in innumerable ancient buildings built of wood and still standing. The long life of these buildings has not resulted from using timber of superior durability, for the wood in most of them is not outstanding in this respect. Their durability has resulted, rather, from the fact that conditions within the buildings were not favorable to rapid deterioration, and from a steady process of repair and correction wherever disintegration was found.

THE WOOD DESTROYERS

Wood constitutes the food of certain plants (wood inhabiting fungi) and animals (insects and marine borers), and when conditions in a building are favorable to the growth of these pests, they can destroy its usefulness, sometimes within a year or two.

In the design and construction of a building, much can be accomplished to prevent deterioration of the wood by fungi and insects. The most important precautions are to insure that the wood remains dry in service and does not contact the soil. At moisture contents of 20 percent or less (based on its oven-dry weight) wood does not decay.

In a normal-occupancy dwelling in good repair, the moisture content of all of the interior woodwork and furniture remains substantially below this figure and the wood is safe from fungi. However, leaks from roofs or plumbing, condensation within walls or on windows, penetration of moisture through concrete floors or masonry walls, collection of rain water in joints and crevices, and direct contact of wood with the soil can provide enough moisture to permit decay.

There are also certain fungi that, once established in a piece of damp wood, can conduct water to dry wood and thus ac-

complish its destruction. Fortunately, these so-called "dry-rot" fungi cannot stand the temperatures commonly maintained in our heated buildings and they are not so plentiful in the United States as in western Europe. Furthermore, if the wood is kept dry, the "dry-rot" fungi do not get started.

Ground-nesting (subterranean) termites also have the capacity to destroy dry wood by bringing water to it from the soil. Since these insects must always have plenty of moisture, their attacks can be prevented or their depredations stopped by interposing barriers between the wood and the soil.

The first precaution, however, is to remove all old stumps, decaying wood, and building debris from the building site, for these tend to attract termites and help them build up their colonies until population pressure forces them to seek new sources of food.

Dry-wood termites cannot be excluded from buildings by barriers between the soil and the wood, since they do not live in the soil and require no water other than that found in normally dry wood. A pair of them can light on a dry board or in a joint or crevice in a building and soon bury themselves from sight to start a new colony. Fortunately, they are found only in a narrow belt of territory around the southern border of the country. They also work slowly. In the territory where they are found, they are not easy to keep out of buildings. Screening, painting, and sanitation are helpful, and, of course, the insects cannot attack well-treated wood.

Another pest that sometimes attacks dry wood is the Lyctus powder-post beetle. These beetles are occasionally found in the hardwood flooring, doors, and trim of buildings. If they are left undisturbed, they can in time cause great damage. The Lyctus beetles confine their activities to the sapwood portions of the hardwood species woods and do not work in the softwood species. They are not found in kiln-dried lumber unless it has been stored near infested material

for a long time after drying. The best defense against them is to make certain that the hardwood lumber used in the building contains no insects at the time of installation. For the country as a whole, powder-post beetles do not constitute a major menace to buildings and their control is usually not difficult but in individual cases their eradication may prove costly.

There are a number of other insects which are occasionally found to damage wood in buildings, but generally they are of less importance than those cited above. The excellent government publications (listed at the end of this article) relating to the control of termites, other insects, and wood-destroying fungi give detailed information about how to avoid the attacks of these pests or how to eradicate them when found in a structure.

WOOD PRESERVATIVES

When the design of the building or the nature of the occupancy make it necessary to use wood under conditions favorable to the growth of fungi or insects, the use of wood preservatives properly applied will provide long life. Wood preservatives protect wood by making it poisonous to its potential destroyers. So long as enough preservative is present in the wood contacted by an insect or a fungus, it cannot digest it, but when too little preservative is present, or when there are breaks through the protective zone, damage is possible. Thus, not only the preservative used, but its amount and distribution in the wood are important. Attention to these details is necessary for successful protection.

Wood preservatives may be classified in various ways, according to particular characteristics considered to be of major importance for different purposes. For use in buildings, for example, they may be divided into two main types, each with two subclasses. These are not standardized types, but are useful for

*Former Director, U. S. Forest Products Laboratory, Madison, Wis.

the present discussion. Other groupings might be used for other purposes:

Type A. Clean and paintable

1. Applied in water
2. Applied in oil solution

Type B. Oily and not readily paintable

1. By-product oils and oil mixtures
2. Toxic chemicals dissolved in non-volatile oils

Each of the foregoing subclasses can be subdivided further, according to color, odor, degree of paintability, and other characteristics.

Preservatives not Readily Paintable

The oily preservatives of Type B include coal-tar creosote, creosote-coal-tar solution, creosote-petroleum solution and petroleum-pentachlorophenol solution. These have only limited suitability for use in buildings because of their color and odor and the oily surfaces they impart to treated wood. They have been used to a small extent in the foundation timbers of houses and they are finding increasing use in "pole" barns and similar structures. Their greatest usefulness is for the protection of railway ties, bridges, posts, poles, foundation piles, and other products

where the treated wood is exposed to the weather or is in contact with the soil or fresh water. Wood piles and lumber used in salt water pose a special problem for which only coal-tar creosote and creosote-coal-tar solutions can be recommended.

By far the greatest amount of wood processed by the commercial wood-preserving industry is treated with preservatives of Type B, and no preservatives are known that will give greater protection to wood which must be used under conditions favorable to the growth of fungi and insects. The architect should not ignore these preservatives but, for many buildings, he will probably find them of limited utility.

Clean Paintable Preservatives

The clean preservatives grouped in Type A are usually chosen for buildings designed for human occupancy, storage of foodstuffs, and similar "sensitive" purposes, because of their general freedom from offensive characteristics. Even these preservatives, however, have their individual differences and limitations which should be understood in order to choose among them wisely. There is no perfect, fool-proof preservative.

Water-Borne Preservatives

Preservatives in water solution leave the wood clean, odorless, and paintable, but the large amount of water injected with the preservative swells the wood nearly to its green dimensions and must be dried out after treatment until the wood reaches a moisture content appropriate for its intended use. The redrying is, of course, accompanied by shrinkage, which should take place before the wood is built into the structure. The wet wood may be kiln dried or air dried according to the requirements of the job and the time available. This characteristic of water-borne preservatives imposes no serious hardship for most uses but requires foresight in ordering, to allow sufficient time for drying after treatment.

The swelling and shrinking of the treated wood cause roughening of planed surfaces and sometimes a moderate distortion of cross-grained wood or wood that was not properly dried originally. As a result, light resurfacing after treatment and redrying may be required for some uses.

Some water-borne preservatives leave the treated wood practically unchanged in color. Preservatives containing cop-

TABLE 1. Water-Borne Preservatives

(Now Included in Standards of the American Wood-Preservers' Association)

PRESERVATIVE	Chemical designation	Proprietary or trade name	RECOMMENDED MINIMUM RETENTION (lb per cu ft)					
			A.W.P.A. Standards or reports	Above ground	In ground contact	Federal Specification TT-W-571c		
Acid copper chromate		Celcure		0.5	1.0		0.5	0.75
Ammoniacal copper arsenate		Chemonite		0.3	0.5		0.3	0.45
Chromated copper arsenate		Erdalith, Greensalt		0.35	0.75		*	*
Chromated zinc arsenate		Boliden salt		0.5	1.0		*	*
Chromated zinc chloride		CZC		0.75	1.0		0.75	1.15
Copperized chromated zinc chloride		Copperized CZC		0.75	1.0		*	*
Fluoride, chromate, arsenate, phenol mixture		Tanalith		0.35	0.50		0.35	0.55
Zinc chloride		Zinc chloride		1.0	1.25		1.0	1.5
Zinc meta arsenite		ZMA		0.35	0.50		0.35	0.55

* Not yet included in the Federal Specification.



TREATED: in the structure above, the floor joists, bridging and sub-floor were pressure-treated with a water-borne preservative for protection against termites and decay. Since water swells the wood during processing, it must be dried before use.

UNTREATED: an easy prey for wood destroyers is untreated wood in contact with the ground; in any case, however, siding should not be brought down against the soil.

per, chromium, or dinitrophenol leave it more or less colored by the predominating colored components. This color is helpful in identifying treated wood and in indicating the depth of penetration. In most of the lumber in a building, the color is unimportant, and it can be hidden by paint, if the wood is properly dry. When the wood is to receive a natural finish, however, the color will have to be taken into consideration.

Water-borne preservatives impart no odor to the wood, which makes them especially suitable for food storage structures or other buildings where odor would be objectionable. They are also nonvolatile and do not vaporize from the wood into the air, to contaminate nearby materials. All preservative chemicals, like most household chemicals, would be poisonous if ingested in sufficient quantity by humans or animals, but the wood treated with them is not dangerous to occupants of buildings, to those who handle the treated wood in constructing the buildings or who come into contact with it later. In the machining of treated wood, however, a good dust-collecting system is required, so that workmen will not breathe contaminated dust.

The practicability and usefulness of the water-borne preservatives is evidenced by the fact that some 6 million lb of them were used by the commercial wood-preserving industry in 1952, presumably these were employed mostly in buildings. If wood is well treated with an adequate quantity of a good water-borne preservative, and if it is not cut into after treatment so that the un-

treated interior is exposed, it should resist decay and insects for hundreds of years — unless it is exposed to wet conditions. Even when the service conditions are so wet that the preservative is gradually leached from the wood, many years of life can be expected, particularly from the growing number of newer preservatives which are formulated to resist leaching.

Zinc chloride solution was for many years the chief water-borne preservative in commercial use. It was a useful preservative and still is but it has been almost entirely replaced in recent years

by preservatives containing no zinc or in which other compounds are added to the zinc salt. The addition of chromium salts, for example, provides what is known as chromated zinc chloride and the further addition of copper salts gives copperized chromated zinc chloride. Other good water-borne preservatives, that are sold under proprietary names, contain various combinations of copper, chromium, arsenic, zinc, and other ingredients.

There is practically no limit to the number of usable formulations that could be developed, but a considerable

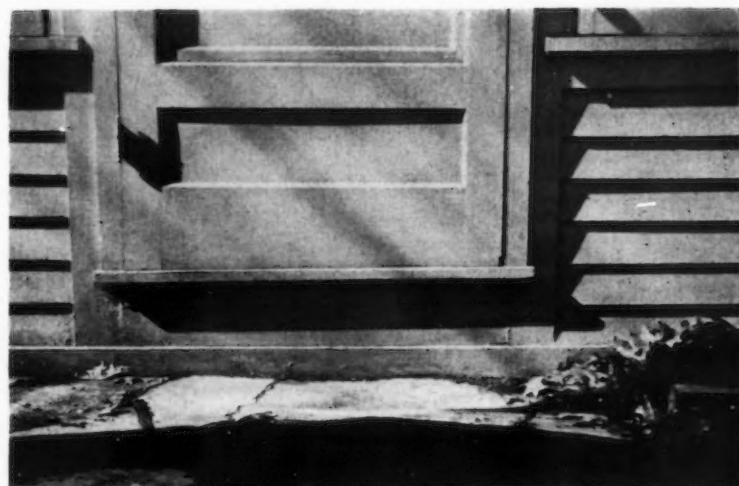


TABLE 2. Treatments for Various Applications

Wood products and use conditions	Preferred preservatives	Minimum retentions	Applicable treating conditions and specifications*
Window sash, window frames, exterior doors, finish lumber, for use in buildings of ordinary occupancy and protected by paint or other finish	Type A2 (Usually a 5 per cent solution of chlorinated phenols with water repellent added)	No minimum retention specified	3-minute immersion or equivalent vacuum treatment. Both preservative and method of treatment to meet the standards of the National Woodwork Manufacturers' Association
Sills, floor joists and framing, and other lumber for dwellings where conditions will favor decay and insect attack but wood is not in contact with the ground; nailings strips and subfloors over concrete floors in ground contact	Type A1	0.30 to 1.0 lb dry chemical per cu ft according to specific preservative used	Pressure treatment according to A.W.P.A. standard C2 or Federal Specification TT-W-571
	Type A2	6 lb of solution per cu ft	Pressure treatment according to Federal Specification TT-W-571
All sash, frames, lumber, and plywood in buildings of wet occupancy or where high humidity will prevail; building lumber in contact with the ground or wet surfaces	Type A1	0.45 to 1.50 lb dry chemical per cu ft according to specific preservative used	Pressure treatment according to A.W.P.A. standard C2 or Federal Specification TT-W-571
	Type A2	10 lb of solution per cu ft	Pressure treatment according to Federal Specification TT-W-571
Outdoor structural material in ground or fresh water contact where cleanliness and paintability are not required	Type B1	6 to 12 lb per cu ft according to species, size, and use conditions	Pressure treatment according to A.W.P.A. standard C2 or Federal Specification TT-W-571
	Type B2	10 lb of solution per cu ft	Pressure treatment according to Federal Specification TT-W-571

* Although hot-and-cold bath treatment is not mentioned, it will give acceptable protection if and when the retentions and penetrations specified for pressure treatment are obtained.

amount of costly experimental work, observation, and commercial experience is required with any new formula in order to demonstrate its practicality, dependability, and economy.

Table 1 shows the water-borne preservatives that are now covered by A.W.P.A. specifications. The detailed formulas for these preservatives are given in the specifications of the Association. All of these salts will give good protection when properly used. In general, individual wood-preserving plants are prepared to treat with only one or two of these preservatives, and for this reason the available salts vary from plant to plant.

Toxic Chemicals in Volatile Oils

The Type A preservatives applied in oil solution theoretically could consist of any acceptable toxic chemical dissolved in a volatile solvent which would subsequently evaporate, leaving the toxic chemical in the wood. Actually, they consist mainly of pentachlorophenol and other chlorinated phenols dissolved in a volatile petroleum oil, such as Stoddard solvent. Other sol-

vents and toxicants could be used, but thus far they are at a general disadvantage in respect to cost, color, odor, permanence, or some other characteristic when compared with volatile petroleum solvent solutions of pentachlorophenol. Nevertheless, solutions of copper naphthenate and of phenyl mercury oleate find some use, and eventually other toxic organic compounds may prove useful and acceptable.

Pentachlorophenol solutions of Type A usually contain 5 per cent of chlorinated phenols, of which at least 3 per cent must be pentachlorophenol. They may also contain certain other additives to prevent the crystallization or "blooming" of the pentachlorophenol on the surface of the wood and, frequently, to give the treated wood some degree of water repellence.

One such preservative in wide use contains 3 per cent pentachlorophenol, 1½ per cent tetrachlorophenol, and ½ per cent chloro-2-phenylphenol, with or without the addition of water repellent, as desired. Pentachlorophenol is a crystalline organic chemical with moderate odor, low volatility, and low solubility

in water. The oil solution of the pentachlorophenol does not cause swelling of the wood treated with it, and there is no shrinkage or swelling after treatment, except that caused by changes in moisture content of the wood.

The presence of the water repellent in the solution makes the treated wood less subject to changing moisture conditions and consequent changes in dimensions, but it does not actually moisture-proof the wood or make it immune to dimension changes. The moisture repellent also has a favorable influence upon the preservative effectiveness of the solution.

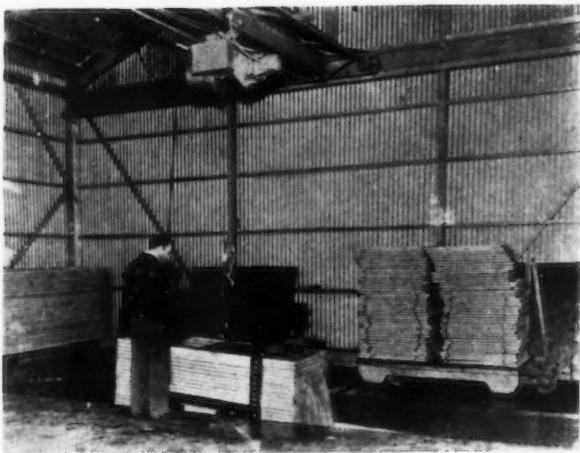
The pentachlorophenol solution is highly flammable, because of the nature of the solvent used, and the freshly treated wood will ignite and burn readily. After the solvent has evaporated, however, the treated wood has substantially the same fire properties as before treatment.

Pentachlorophenol is used in both Type A and Type B preservatives, the difference and the field of usefulness depending upon the character of the solvent used. In treating poles, posts,

METHODS OF TREATMENT

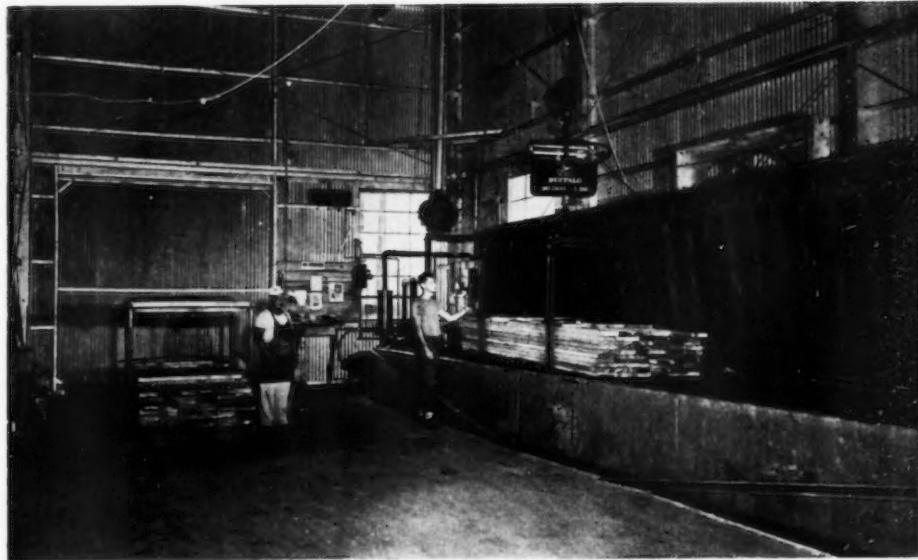


1. HOT AND COLD BATH



2. THREE-MINUTE IMMERSION

Courtesy Pacific Mfg. Co.



3. VACUUM

Courtesy Protection Products Mfg. Co.



4. PRESSURE

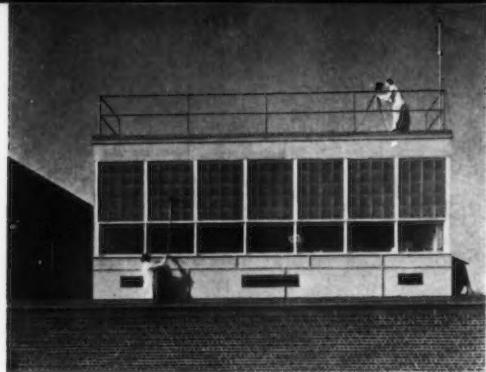
Courtesy American Lumber & Treating Co.

and rough construction lumber, for example, Type B preservatives are most often employed, with a nonvolatile fuel oil employed as the solvent. Here paintability and cleanliness are usually less important than long life under severe conditions. In buildings, however, where cleanliness and paintability are paramount and the service conditions are less severe than outdoors, the Type A preservatives are appropriate.

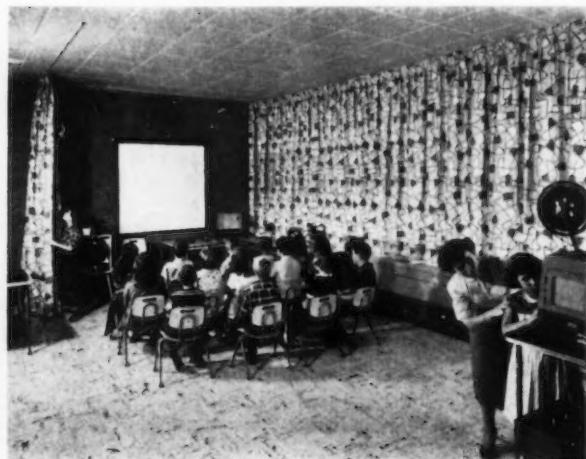
Over 4 million lb of "penta" were used in Type B preservatives in 1952. Clean, Type A "penta" solutions find extensive use in the millwork industry for the treatment of window sash by three-minute immersion or by equivalent vacuum methods. The amount so used is undoubtedly large, but statistics are not available.

Type A copper naphthenate or penta solutions are sometimes applied by pressure methods, which provide more complete control of retention and penetration. Such light treatments would not be sufficient for wood used in contact with the ground or under other severe conditions, but they are giving

(Continued on page 184)



NEW DAYLIGHTING SYSTEM BRINGS COLOR



Experimental classroom in operation: Top of page, exterior of structure showing south wall; Above, left and right, audio-visual section as it is used for ordinary activities and for television and movie projection. Note how drape retracts to east wall, secondary room-divider drape; Right, overall view of room, facing south-east. Note skylight blocks, acoustical tile ceiling and framing. Window mullions are painted bright colors; Below, left, view toward north-east corner of room with easel boards, glass painting board and sinks; Below, right, northwest corner of room, showing entrance, display board



PRODUCT REPORTS

Materials / Equipment / Furnishings / Services



FLEXIBILITY IN CLASSROOM DESIGN

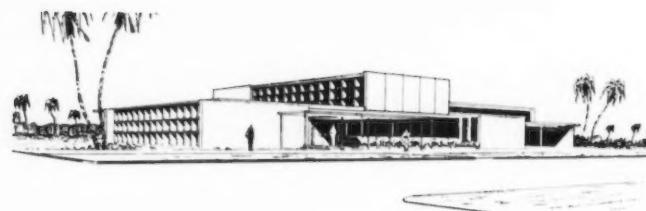


AN impressive set of ideas and potentialities for design of schoolrooms has achieved concrete application recently in an experimental classroom developed at the University of Michigan's Daylighting Laboratory. Capping 12 years of research directed by Dr. Robert A. Boyd under the sponsorship of the Kimble Glass Co., the classroom scheme has taken a giant step toward a long-sought goal of American educators—the breaking down of the institutional character of the classroom and the substitution for it of a more homelike atmosphere for young students.

At the heart of the scheme is a new system of daylighting which extends natural light into the deepest corners of the room and obviates the necessity for employing light-colored walls, white ceilings, and furnishings with high reflective values. In place of these conventional elements in classroom planning, the new scheme uses warm wood paneling, colorful drapes, colored mosaic tile, and other similar materials. In addition, the even distribution of natural light permits greater flexibility in planning for varied activities, since it is no longer necessary to confine close detail work to areas nearest windows. It is also easier with the new system to plan for multiple simultaneous activities, including audio-visual techniques.

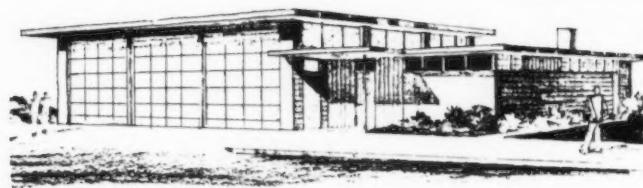
The daylighting system which permits all this consists of a conventional south wall installation of light-directing glass block and clear vision strip, used in combination with ribbon panels of Kimble's prismatic "Toplite" blocks, installed in the ceiling, parallel to the main fenestration and 5 ft in from the opposite wall. The "Toplite" blocks (reported on in detail in *ARCHITECTURAL RECORD*, July, 1953, pp 187, 198, 202) are hollow glass units with a prismatic design which admits light but reflects heat and glare, the bugaboos of many previous skylight systems. These blocks are set in prefabricated aluminum grids for simplified installation. They are designed to provide optimum daylighting throughout the year, and to average

(Continued on page 214)



FIRE STATION DESIGN GUIDE

Three new firehouses shown in book: Above, Sinton, Texas Municipal Building and Fire Station, E. Dexter Harmon, Architect; Right, Toledo, Ohio Fire Headquarters, Bellman, Gillett & Richards, Architects; Below, Marysville, Wash. Fire Station, Harold W. Hall, Architect



• *Fire Station Design*. Volume 4 of biennial publication is the largest in the series of reference books for chiefs, city officials, architects, architectural students and others interested in housing facilities for the fire service. The book depicts plans and perspective drawings of about 70 of the newest stations in the United States and Canada, with editorials by technicians, architects and the National Board of Fire Underwriters. It will be sent gratis to all who request it. 60 pp., illus. *Circul-Air Corp.*, 575 E. Milwaukee Ave., Detroit 2, Mich.

AIR CONDITIONING

Heating and Cooling Your Home. Booklet discusses the principles of blended-air heating and blended-air conditioning, pointing up the many economies which may be realized by the home owner when installing summer cooling. Diagrammatic sketches illustrate how the Blend-Air system works, and also how it looks in the home. Answers to questions which have arisen on heating and cooling are included. 22 pp., illus. *Coleman Co., Inc.*, Wichita, Kan.

*Other product information in Sweet's Architectural file, 1953

FLOOR REPAIR

Floors. . . . Booklet describes importance of good floors in industrial, institutional and public buildings. The result of many years of research in flooring problems, it explains differences between floor requirements for various industries. It lists the manufacturer's floor resurfacing and repair products, describes outstanding qualities of each material, and recommends the uses to which each should be applied. It also contains a sample of a floor analysis form which assists maintenance superintendents in determining their floor requirements. Methods of application of each product are also described. 20 pp., illus. *The Monroe Co., Inc.*, 10703 Quebec Ave., Cleveland 6, Ohio.*

PLASTICS

Extrusion Injection Fabrication. *Bulletin No. 150*. Brochure includes information on the following: extrusion injection fabrication; company facilities; plastic tubing for all purposes; extruded gaskets for metal buildings, refrigerators, appliances, storm windows, etc.; plastic shapes for profile extrusions; extrusions for belting and trims, and flat strips for stamped products; injection molding and fabrication for pipe fittings, vacuum wands, and custom fabrications; and

pipe and fittings. Tables and definitions and easy-to-read specifications on hard-to-understand plastic terms and applications are included. 8 pp., illus. *Yardley Plastics Co.*, 142 Parsons Ave., Columbus 15, Ohio.

RUBBER FLOOR MAINTENANCE

Approved Maintenance Methods for Rubber Floors. Booklet gives information on approved methods of maintaining rubber floors, and contains detailed instructions on how to clean and wax rubber floors. A list of cleaners and waxes, tested and found to meet specifications set up by the Association, are included. 10 pp., illus. *Rubber Flooring Div., The Rubber Mfgs. Assoc., Inc.*, 444 Madison Ave., New York 22, N.Y.*

PICTURE WINDOWS

Beautiful Picture Windows. Booklet contains sketches of 82 picture windows shown in different room settings, illustrating how aluminum framed picture windows can enhance rooms by affording maximum light and ventilation. Some of the standard shapes available are also given. 31 pp., illus. 25 cents. *Fleet of America, Inc.*, 470 Dun Bldg., Buffalo 2, N.Y.*

(Continued on page 250)

GYPSUM PLASTER IN RADIANT HEATING SYSTEMS: 3

Presented Through The Courtesy of The Gypsum Association

"Check Points and Job Practices"

1. The construction should be inspected closely to make certain that the weight of the heating elements is supported by permanent attachment to the structural framing members.
2. The circulation elements of the system should be checked for leaks and operating efficiency before plastering.
3. Grounds for plaster should be thoroughly checked to insure a minimum plaster coverage of $\frac{3}{8}$ in. beneath the heating elements.
4. Care should be exercised that the plaster is mixed and applied according to ASA specifications for the type of plaster specified.
5. The radiant heating system should never be used to heat the building during plastering operations. If the plastering is done in cold weather, it is recommended that heat be furnished by temporary, portable heat circulators, with ventilation. Care must be taken to avoid a concentration of heat on the ceiling, which may result from use of salamanders. The building should be uniformly heated in a range of 55 to 70 F.
6. When the heating system is put in operation the temperature rise should be gradual. It is recommended that the increase in temperature does not exceed 5 degrees F in 24 hours until the maximum temperature within the heating element has been reached.
7. Decoration, including sizing or sealing, should not be started until the heating system has operated at maximum temperature for at least 24 hours. Decorating of the gypsum materials should not be performed while the heating system is in operation.
8. It is also recommended where textures or tinted finishing plasters or decoration begins. The decoration should be allowed to set and dry thoroughly before resumption of heating operations

DESIGN DATA GYPSUM MATERIALS.

The following Conductivities (k) Conductances (c) and Resistances are recommended for use in calculating Heat Transmission Coefficients (U)

HEAT TRANSMISSION CHARACTERISTICS

	C		R	
	k	c	1/k	1/c
Air Spaces				
* Bounded by ordinary materials (Horizontal or Vertical)			1.10	0.91
* One air space faced with aluminum foil				
Heat Flow Upward or Horizontally	0.46		2.17	
Heat Flow Downward	0.15		6.51	
Gypsum lath $\frac{3}{8}$ "	3.1			0.32
Gypsum lath $\frac{1}{2}$ "	2.82			0.35
Gypsum board $\frac{3}{8}$ "	3.1			0.32
Gypsum board $\frac{1}{2}$ "	2.82			0.35
Gypsum lath $\frac{3}{8}$ " with Plaster $\frac{1}{2}$ "	2.4			0.42
Metal Lath and Plaster $\frac{3}{8}$ "	4.40			0.23
Gypsum Concrete 87 $\frac{1}{2}$ % Gypsum:				
12 $\frac{1}{2}$ % Wood chips	1.66		0.60	
Gypsum Tile 3"		0.61		1.64
Gypsum Tile 4"		0.46		2.18
Gypsum Sheathing $\frac{1}{2}$ "		2.82		0.35
Expanded Vermiculite	0.48		2.08	
Perlite	0.48		2.08	
Sand (Ottawa)	10.0		.10	
Plastering Mixes				
Gypsum sand				
100:200 lbs	4.32 to 5.55		0.18 to 0.23	
100:300 lbs	4.24 to 5.77		0.17 to 0.24	
Gypsum Perlite				
100 lbs: 2 cu. ft.	1.52 to 1.68		0.60 to 0.65	
100 lbs: 3 cu. ft.	1.23 to 1.35		0.74 to 0.81	
Gypsum Vermiculite				
100 lb: 2 cu. ft.	1.78 to 1.84		0.54 to 0.56	
100 lb: 3 cu. ft.	1.44 to 1.63		0.61 to 0.69	

* - $\frac{1}{4}$ " or more in width

THERMAL EXPANSION COEFFICIENTS

Type of Plaster	Inches per Inch per Degree Fahrenheit
Gypsum Sanded Plaster	0.000005 to 0.000009
Gypsum Vermiculite Plaster	
Gypsum Perlite Plaster	
Gypsum Wood Fiber Plaster	0.000009 to 0.000015
Specific Heat of Gypsum ($\text{Ca}_2\text{SO}_4 \cdot 2\text{H}_2\text{O}$)	0.26

DENSITIES

Plaster Mix Set and Dry (1 part gypsum: 2 parts aggregate to 1 part gypsum to three parts aggregate)	
Gypsum—Sanded Plaster	105 to 115 pounds per cu. ft.
Gypsum—Vermiculite Plaster	40 to 50 pounds per cu. ft.
Gypsum—Perlite Plaster	

through the embedded elements.

9. Be certain the job specifications are being followed. For example, the substitution of one aggregate

for another would change the rate of heat flow, which may give results that would make the entire installation unsatisfactory.



**Friction-Fit Fittings
speed installation —
eliminate unsightly
screws and welds**

Sections are neatly joined by use of a flat splice or aligning plate. No punching is required and there are no exposed screws.



This is *MILCOR*^{*} 605 Metal Base *Tap It Together . . . It Lasts a Lifetime*

Just tap it together — that's all there is to it! Thanks to friction-fit fittings, no punching or screws are needed. Installation is faster and you get a better looking job as well as a substantial savings in construction time. The illustration, at the lower right, shows how easy it is to use.

Sanitary, fire-safe, and durable, Milcor No. 605 Metal Base is ideal for use with asphalt, rubber tile, or linoleum floors. It has a prime coat for easy finishing to match or contrast

with wall color. Moreover, it does not pull away from the wall — does not crack or splinter. That's why you find Milcor No. 605 Metal Base in your most modern buildings, such as hospitals, schools, hotels, apartments, office and industrial buildings.

No. 605 is representative of a complete line of Metal Base available for all types of installation. If you need further information, just write us and we'll take care of your request immediately.

INLAND STEEL PRODUCTS COMPANY

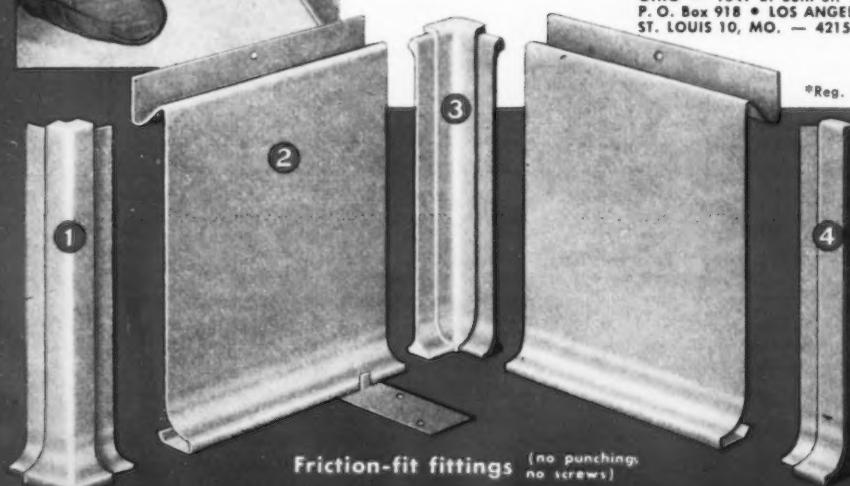
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*Reg. U. S. Pat. Off.

M-126



Friction-fit fittings (no punching, no screws)

1 Outside corner fittings — square or $\frac{1}{2}$ " radius, cast.

2 No. 605 Metal Base Section — 4" and 6" heights in standard 10-ft. lengths.

3 Inside corner fittings — square or $\frac{1}{2}$ " radius, cast.

4 End-stop — left and right hand, cast.

Flush-type, plastered-in design



SIMPLIFIED WALL FRAMING METHODS—1

Presented through the cooperation of the N.A.H.B. Research Institute

Modular Planning Reduces Time and Waste

The following pages are extracted from "Trade Secrets Report No. 1" prepared for the National Association of Home Builders Research Institute under the direction of Leonard G. Haeger, with Lee Frankl Consultant. The Report seeks to present basic tools of rationalization which can be used by members of the building industry to reduce costs for the framing of exterior walls in small houses. It was the opinion of the editors that these findings would be of interest to architects doing work in that field. The series will be continued in January.

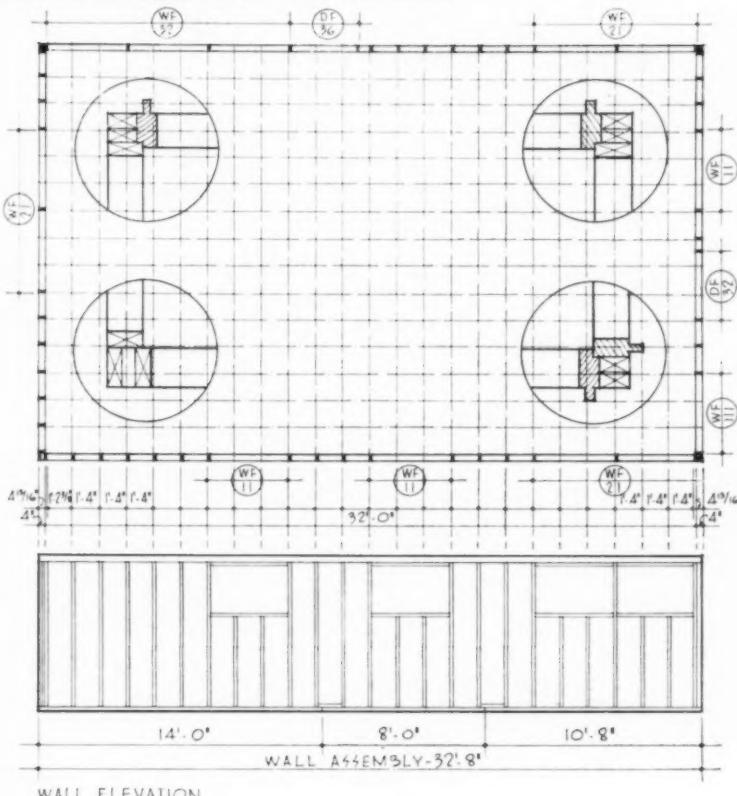
Basic Principles

1. Pre-cutting all framing members.
2. Pre-assembly of window and door units and of framing sub-assemblies.
3. Use of standard sizes of materials to minimize cutting and fitting. These standard sizes are simple to apply when wall dimensions are "modular."
4. Assembly of exterior walls—jigs are the important assembly tools, economically useful for a single wall section, as well as for several projects. Jigged wall sections may include only framing members or any or all of the following: sub-assemblies of framing members; window frames; window units; fixed glass; louvers; door frame; door unit; sheathing; exterior finish.

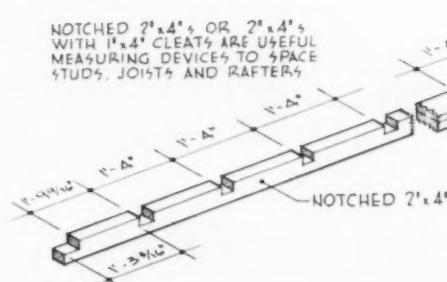
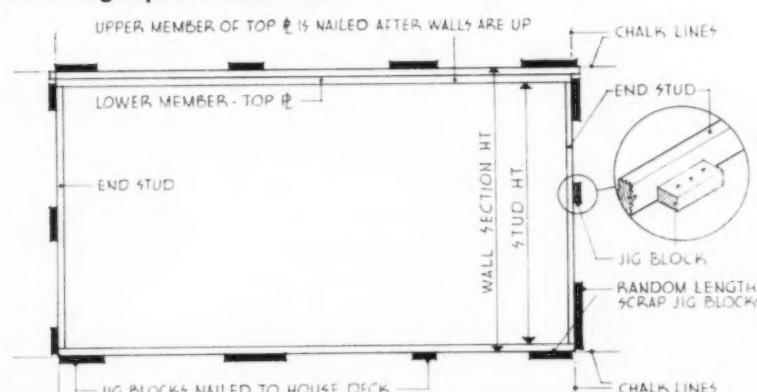
Problems

Building costs are not based on materials, site labor costs plus overhead alone:

1. Pre-cutting—The handling of framing lumber bought by carload—from freight car—to truck—to central site—to milling operation or



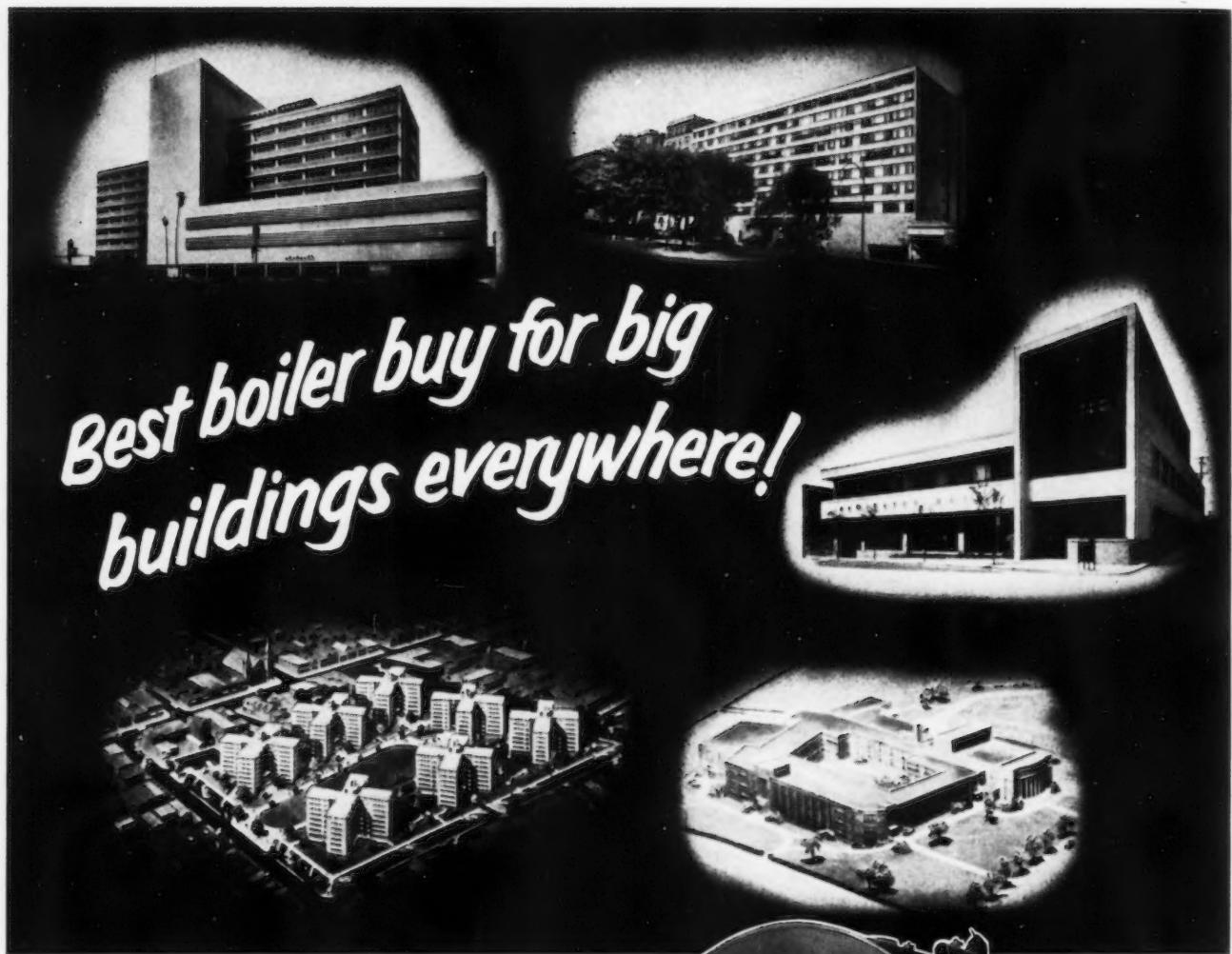
Use of Jigs Speeds Construction



NOTCHED 2^x4's, OR 2^x4's WITH 1^x4 CLEATS ARE USEFUL MEASURING DEVICES TO SPACE STUDS, JOISTS AND RAFTERS

THESE SPACERS CAN BE USED WITHOUT JIG BLOCKS ON CONCRETE SLABS BY

1. SNAPPING CHALK LINES FOR OUTSIDE
2. PLACING FULL LENGTH SPACER WITH NOTCHES UP, 2^x INSIDE PLATE LINE
3. SQUARING FRAMING BEFORE APPLYING SHEATHING



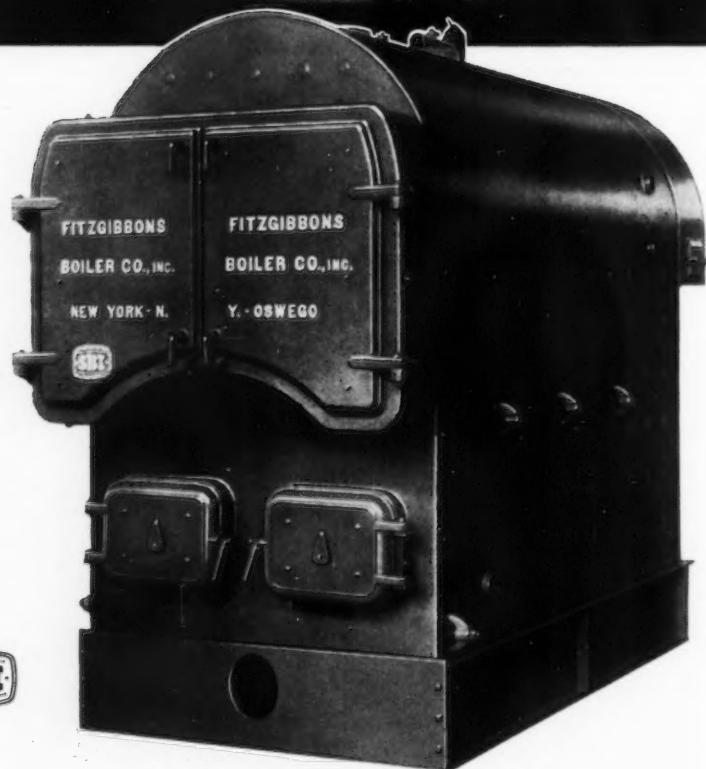
*Best boiler buy for big
buildings everywhere!*

**FITZGIBBONS "D" TYPE
STEEL BOILERS**

now serving thousands of large buildings everywhere, have long passed the need for proof of their unsurpassed performance and fuel economy. Apartment owners, office building operators, management staffs of schools, churches, institutional buildings and large department stores of national fame—all acclaim it. The Fitzgibbons "D" Type boiler meets or exceeds ASME Code requirements in all details of construction, as certified by a resident Hartford inspector and is S.B.I. rated. Sixteen sizes from 3,650 to 42,500 sq. ft., steam.



The "D" Type Catalog gives all facts and data. On request from the Fitzgibbons Boiler Company, Inc., 101 Park Avenue, New York 17, N.Y., Dept. AR-12.



THE FITZGIBBONS BOILER®

SIMPLIFIED WALL FRAMING METHODS—2

Presented through the cooperation of the N A H B Research Institute

A Planned Order of Assembly Also Reduces Construction Time

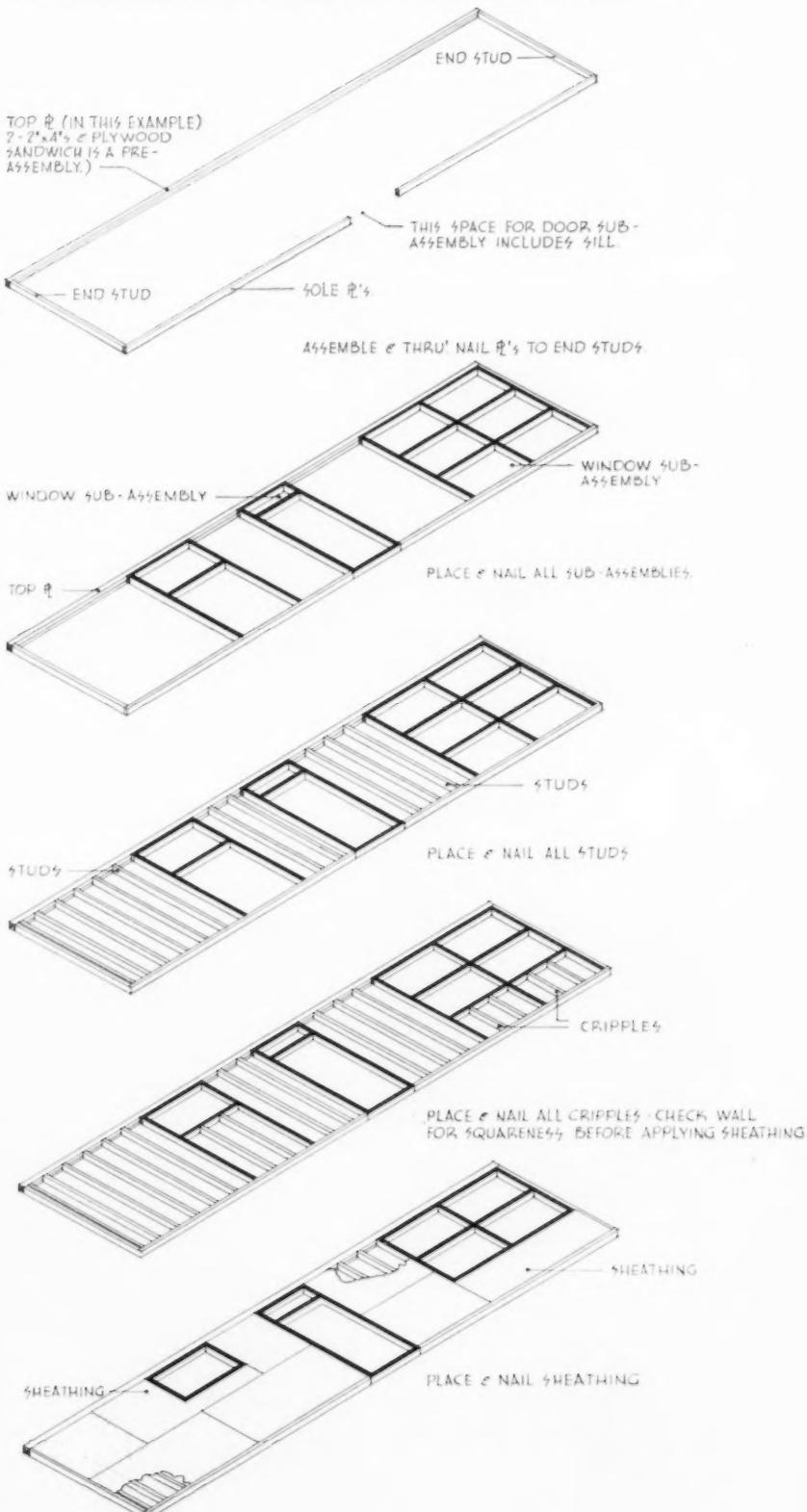
individual house site—can be more costly than buying framing lumber from a local lumber yard. A few progressive lumber yard operators cut timber to exact size. Each board is charged as an even foot length with no cutting charge. Some builders limit carload buying to framing members (such as studs) cut to exact length.

2. Pre-assembled window and door units may be purchased from manufacturer, . . . assembled by local mill, or parts are site assembled by the builder. Local mills will make a door unit complete with hardware, including lock. Example: A Knoxville, Tenn. mill's labor charge for 8 complete door units (the door is locked and the keys are stapled to the door frame) equals a local builder's cost for hanging one door. The same mill provides all door and window trim assemblies. Miters are glued and joined with metal splines. Labor time is 10 per cent of that required for conventional cutting and fitting.

3. Use of standard sizes—simplified framing systems based on standardization result in labor savings when installing sheathing and exterior and interior finish. This dimensional standardization (modular coordination) is based on 4 in. multiples. Its use in planning aids the builder to accurately pre-assemble large sections of the house quickly and economically for either single units or large developments.

4. New methods create new labor problems—when introducing new methods, do not overlook the hammer and saw man's skill in applying these methods to your advantage.

5. Builders' problems include sales as well as construction. Any method which speeds construction helps sales. If a packaged sub-assembly increases cost slightly, it may still be a good investment if its speeds construction and sales.



*"YOUR WINDOW UNIT

PHONE CARMEL R-5511

CHARLES E. WALTER
BUILDING CONTRACTOR
R. R. 1, Carmel, Indiana

April 21, 1953

Rusco Prime Window Co.
3810 E. Sixteenth St.
Indianapolis, Indiana

Gentlemen:

This is to advise that we are now in the process of drawing Rusco Prime Windows into the plans for the next group of apartments on 14th and West Sts., known as Ransom St. Apartments, Inc.

After using Rusco Prime Windows with Metal Casings throughout the above project and also, on our Rolling Acres development we can say, truthfully, that your window unit is without an equal. Ease of installation, lack of field labor, elimination of many window "extras", such as painting and trimming have all added up to a lower "in the wall" cost for our company.

Inasmuch as we are required to maintain the apartment project, we, naturally, are delighted at the elimination of this expense in regards to your windows.

Incidentally, our response to your Fulvue unit on our Rolling Acres development has been most gratifying.

Very truly yours,

A. & W. Construction Co.
Charles E. Walter
Charles E. Walter, Pres.



RANSOM ST. APARTMENTS, INDIANAPOLIS, INDIANA
is a 1,000-apartment project being built by the A & W Construction Company, and now partially completed. Photo above shows one of the completed units. At left is close-up of the Rusco Type P-22 Vertical Slide Prime Windows installed on unit.
ARCHITECT: Paul Cripe • BUILDER: A & W Construction Company

IS WITHOUT AN EQUAL"

FULLY PRE-ASSEMBLED RUSCO PRIME WINDOWS PROVIDE THE ANSWER TO TOP QUALITY AT LOW COST



Rusco Prime Windows make possible very substantial savings in labor, installation time and maintenance. Because they are fully pre-assembled units—glazed, finish-painted, with surround and hardware attached—they reduce field work and installation time to a minimum.

Tubular construction of hot-dipped galvanized steel, bonderized and finished with baked-on outdoor enamel, plus the complete elimination of sash cords, weights and balances, assures smooth, easy operation and lower maintenance.

In addition to these important cost and quality

features, Rusco Prime Windows offer advantages found in no other window. They are fully weatherstripped and may be specified with Rusco's all-year Fiberglas screen panels and with insulating sash as an integral part of the unit.



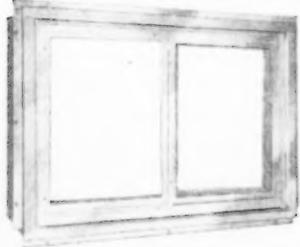
SHAKER TOWERS, DELUXE APARTMENT, CLEVELAND, OHIO
is equipped with Rusco Prime Window complete units, including insulating sash and screens.

ARCHITECT: Joseph Ceruti • BUILDER: Roediger Construction, Inc.

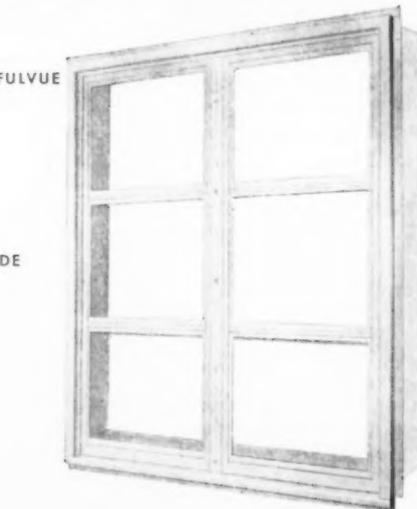


Sliding Glass and Screen Inserts
easily removed from inside
for convenience in cleaning.
The Rusco removable sash
feature has tremendous
appeal as a convenience
and safety feature.

HORIZONTAL SLIDE



VERTICAL SLIDE



FULVUE

RUSCO

*Hot-Dipped
Galvanized Steel*

PRIME WINDOWS

FOR COMPLETE INFORMATION AND SPECIFICATIONS, SEE SWEET'S CATALOGS OR WRITE

THE F.C. RUSSELL COMPANY

DEPT. 7-AR-113, CLEVELAND 1, OHIO
IN CANADA: TORONTO 13, ONTARIO



WE'VE BEEN
GROUNDED! WE
CAN'T HANG AROUND
THIS MINALITH
FLAME-PROOFED
HANGAR ...



Two views of Westchester County's new airport hangars. Fire can't spread to the roof structure because Minalith-treated wood in columns and braces won't carry flame.



How MINALITH* protects these record-spanning airport hangars

New York's Westchester County has some interesting new hangars in its airport. The clear span of each of the bays is 250 feet . . . the world's clear-span record for wooden structures. This figure exceeds by 12 feet a blimp hangar's previous record of a 238-foot clear span.

And equally interesting is the built-in method of fire protection for these immense wooden structures. As a sure means of preventing a possible fire from spreading upward to the roof, all wood below the bottom chord of the arches, including the laminated timber columns, was pressure-impregnated with fire-retarding Minalith.

Listed by Underwriters' Laboratories, Minalith also meets Federal specifications for fire re-

tardants. Wood treated with Minalith will not support combustion . . . it will char slowly where flame touches it, but will not ignite. During a fire, Minalith-treated lumber maintains its load-bearing strength without sudden collapse. As a plus-value, Minalith also protects wood from decay organisms and insect attack. And Minalith has no undesirable effects on lumber, keeping it clean for handling and completely paintable.

Minalith-treated lumber is a product of American Lumber and Treating Company, who also produces Wolmanized* preservative-treated lumber. There are Minalith and Wolman treatment plants in all parts of the country. For further information write:

American Lumber & Treating Company

General Offices: 1601 McCormick Building, Chicago 4, Illinois

Offices: Little Rock, Arkansas • Portland, Oregon • Boston • Los Angeles
San Francisco • Baltimore • New York • Jacksonville, Florida • Seattle



Producers of the Original

MINALITH
FLAME PROOFED
LUMBER

* Reg. U. S. Pat. Off.

a companion product to
Wolmanized
PRESSURE TREATED
Lumber



WOOD PRESERVATIVES

(Continued from page 171)

satisfactory results with window sash. They are also excellent for house and garage doors, window frames, and other forms of millwork.

The National Woodwork Manufacturers' Association has established standards for the preservatives and treating methods used for the products of that industry, and it is good practice in house building to use sash, frames, and exterior doors treated according to these standards.

Satisfactory paintability is not assured, even with Type A preservatives unless proper precautions are taken. The water or the volatile oil that carries the preservative into the wood must first be evaporated. This requires a seasoning period between treating and painting.

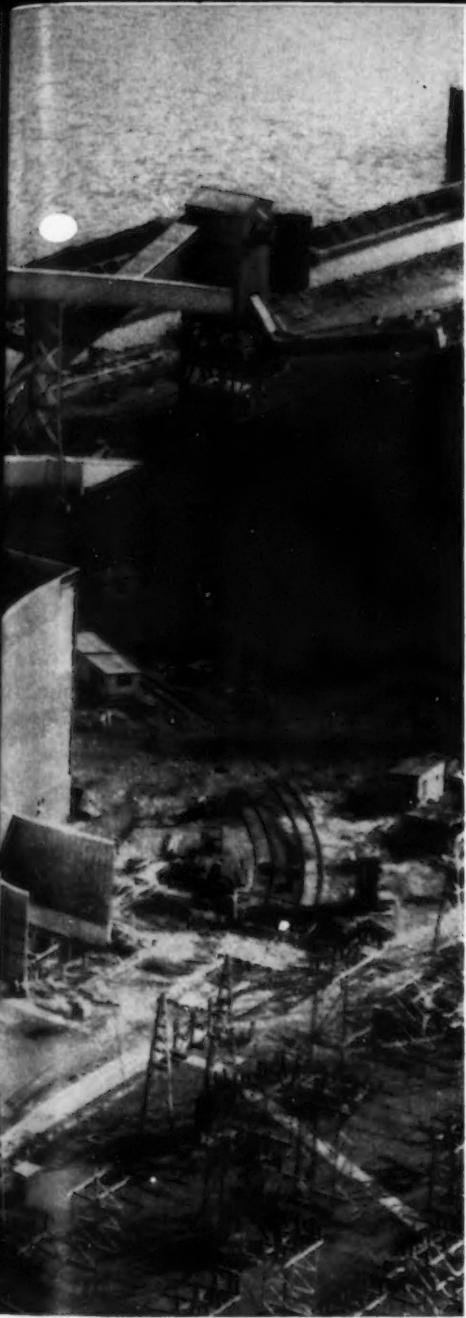
The surfaces to be painted must be free from accumulations of gum or resin which may have been brought to the surface during the treating process or left as a residue from the preservative used. When ordering treated wood that must be painted, it is desirable to emphasize this requirement in the purchase order so that the treating plant operator may avoid the use of very resinous wood or the employment of high temperatures and other conditions that favor the accumulation of resin on the wood surface. He may even be equipped to use a special solvent-seasoning process to provide clean dry material promptly.

METHODS OF TREATMENT

It is not enough to specify a good preservative. Even the best preservatives will fail to give good protection when inadequately applied. The method of treatment, therefore, is as important as the preservative itself. The treated wood must contain a sufficient quantity of good preservative per unit volume and the penetration must be as deep as practicable, in order to assure the desired protection. For general industrial forms and uses of lumber and timber, pressure methods of impregnation are most commonly used and appropriate.

For these reasons, most of the timber treated in the United States is pressure treated. Specifications of the Federal Government, the American Wood-Pres-

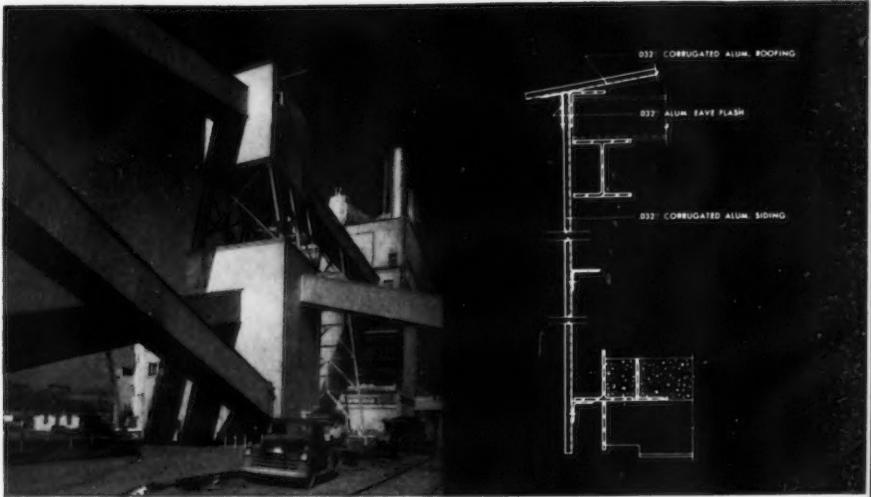
(Continued on page 188)



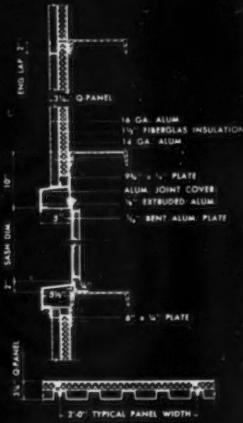
Eorama Power Station,
Duquesne Light Company
Designed by—
Duquesne Light Company
General Contractor—
Dravo Construction Company

Alcoa
Aluminum

ALUMINUM COMPANY OF AMERICA

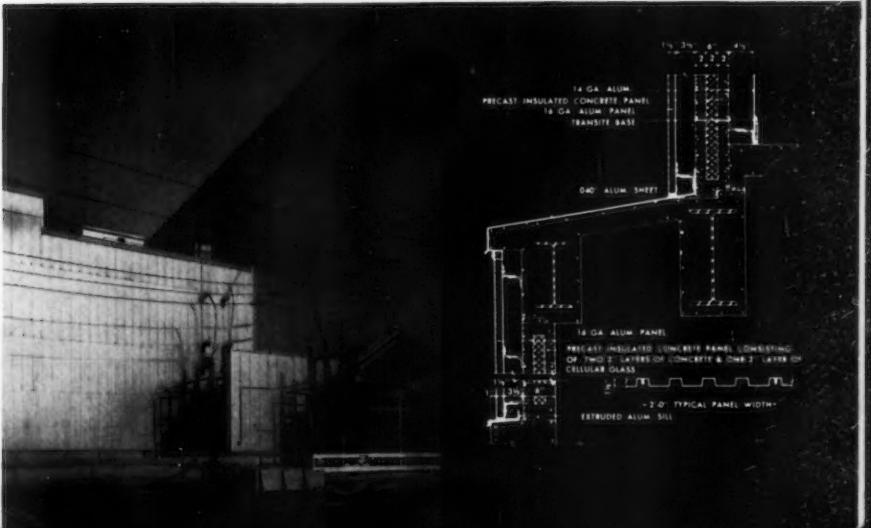


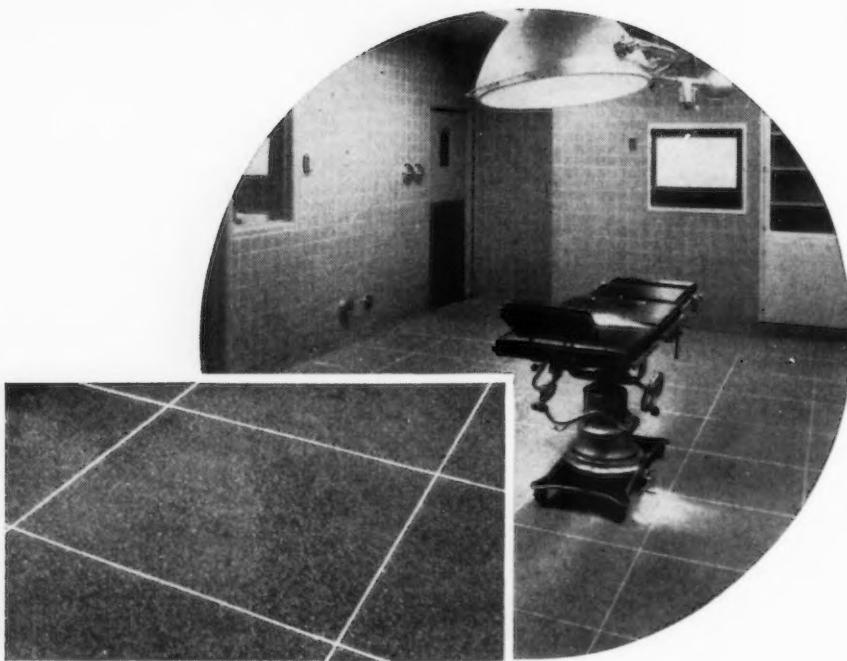
COAL HANDLING STRUCTURES include crusher building, containing machines which crush coal before transfer to bunkers, and transfer building. Both are sheathed with readily available Alcoa® Industrial Roofing and Siding because of its resistance to the corrosive action of coal dust and water.



BOILER ROOM WALLS are Robertson Q-panels, two feet wide, 3 1/4 inches thick, sixteen feet long. Glass fiber cord provides insulating value equivalent to that of 12-inch brick and hollow tile masonry wall. Panel exteriors are fluted Alcoa aluminum sheet, interiors are faced with flat Alcoa aluminum sheet.

CONTROL HOUSE and west wall of turbine room required walls that would pass four-hour fire test. Insulated precast concrete panels were used as core. Sandwich-type construction features two layers of concrete with two inches of cellular glass between. Weather facing is Alcoa aluminum sheet matching other walls in appearance.





Conductive *Terrazzo* meets severest standards of operating room safety

The addition of acetylene carbon black to portland cement TERRAZZO, in accordance with U. S. Public Health Service specifications, meets all safety requirements of the National Fire Protection Association's Standard #56. Current thinking favors such overall conductivity for hospital floors in anesthetizing locations. Installations made during the past four years prove this latest example of TERRAZZO versatility.

Thus, *safety* is added to TERRAZZO's many other advantages for hospitals — permanence, easy maintenance, attractiveness, and ability to be made aseptically clean. Specify TERRAZZO — and be safe. Free AIA Kit upon request.



THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION, INC.

404 Sheraton Building

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Washington 5, D. C.

Send free AIA Kit, about Terrazzo, to

Name.....

Firm.....

Street Address.....

City..... Zone..... State.....



WOOD PRESERVATIVES

(Continued from page 184)

servers' Association, and other groups state the minimum requirements for amount of preservative to be injected and the minimum acceptable penetration for different preservatives, types of products, and conditions of service.

In the pressure-treating process, the wood is enclosed in a pressure-tight vessel or "treating cylinder" and the preservative is forced into the wood by hydraulic or air pressure. Skill is required, in order to secure the specified penetrations and retentions of preservative and keep the costs within reason. Pressure plants vary greatly in size. Some are single-cylinder plants that can treat a few thousand feet of lumber per charge. One of the largest has four treating cylinders, two of which are $9\frac{1}{2}$ ft inside diameter and 165 ft long.

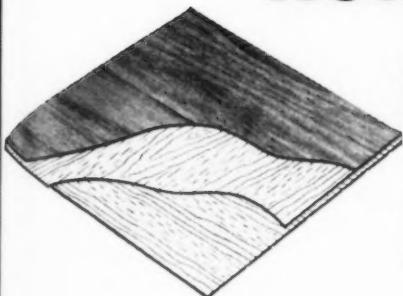
Hot-and-cold bath treatment in open tanks is frequently used for treating poles and posts and occasionally for lumber. The method consists in heating the wood by submerging it in the preservative, and then either immersing the hot wood in cold preservative or allowing the hot preservative and wood to cool together. With easily treated wood, high retentions and deep penetrations can be obtained, but the retentions are not under accurate control. Such heating in the preservative is generally impractical, except with preservatives of Type B.

It is possible to use Type A preservatives, however, by heating the wood separately in a dry kiln or by steam and then immersing it in the cold solution of preservative. Lumber treated by this method in water-borne preservative can be purchased in a few localities. Although it is not so easy to get good impregnation by hot-and-cold bath as by pressure treating, the protection will be proportionately acceptable if the acceptable penetrations and retentions are obtained.

Window sash is commonly treated by three-minute immersion or equivalent vacuum treatment in Type A2 preservative, according to standards of the National Woodwork Manufacturers' Association. The method is also useful for the treatment of window frames, window screen or door screen frames, doors,

(Continued on page 190)

New Bruce oak floor for use over concrete



**LAMINATED 3-PLY OAK GIVES MAXIMUM
STABILITY AND MOISTURE RESISTANCE**

**Now all homes built on concrete slab can
have beautiful hardwood floors**

Bruce has developed this new Laminated Oak Block for easy, trouble-free installation over concrete. Three plies of oak, laminated under heat and pressure with moisture-resistant glue, minimize warping and dimensional changes. Blocks remain flat and square, and can be used over radiant heat.

Easily Installed—Factory Finished

In laying, the blocks are bonded to the concrete slab with a time-proven adhesive (Everbond Mastic). Interlocking tongues and grooves make it easy to fit blocks into floor pattern and keep in alignment. No membrane-waterproofing is required except where hydrostatic pressure may exist. No expansion spaces or joints needed.

The famous Bruce "Scratch Test" Finish is used on Laminated Oak Blocks to insure complete satisfaction of owners. It also eliminates sanding and finishing on the job.

Mail coupon below for literature and complete data on new Bruce Laminated Oak Blocks.

GRADE AND SIZE

One grade only—all faces practically clear.
½ in. thick—9 in. square.
Packed in cartons for protection and convenience.

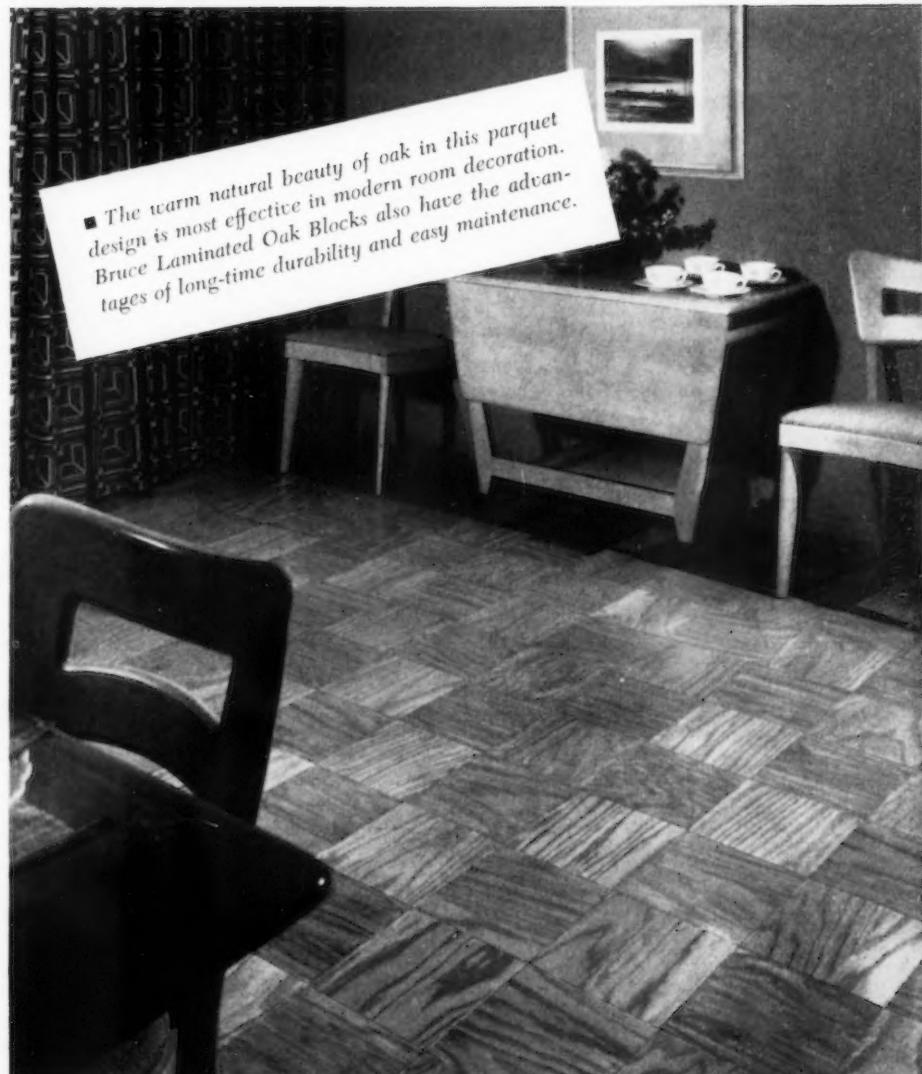


MAIL FOR LITERATURE
E. L. BRUCE CO., BOX 397,
MEMPHIS 1, TENN.

Send complete data on Bruce Laminated Oak
Blocks to:

Name _____

Address _____



**Bruce LAMINATED
Oak Blocks**

With the famous Bruce "Scratch Test" Finish



WOOD PRESERVATIVES

(Continued from page 188)

and other millwork. In the three-minute immersion treatment, the completed wood product, in knocked down or assembled form, is merely submerged in unheated preservative solution for three minutes and then withdrawn and allowed to drain and dry.

In the equivalent vacuum treatment, the wood is enclosed in an airtight chamber, a partial vacuum is drawn, the preservative is then admitted without admitting air, and the remaining vacuum is released. This has the effect of applying the preservative under slight atmospheric pressure.

Longer immersion, higher vacuum, or pressure treatment would give higher retentions and greater protection. High retentions and deep penetrations are desirable when conditions of use are especially favorable to attacks by fungi.

For the sash, exterior doors, and millwork of ordinary dwellings, however, the standard three-minute immersion treatment (or its vacuum equivalent) appears to be adequate. The preservative penetrates quickly and deeply into the joints and exposed end-grain surfaces (the most vulnerable parts of such products), and greatly increases their resistance to decay. Although more thorough impregnation would provide greater resistance to decay and termites, it would entail difficulties or special processing in order to evaporate the solvent from the wood and to leave the surfaces clean and paintable.

Even in the three-minute immersion treatment, an occasional piece of wood absorbs too much preservative and may cause serious staining trouble unless eliminated or specially handled. If such pieces are used after only brief drying, they may cause staining and discoloring of paint or varnish and they have been known to stain wide areas of plaster in contact with the treated woodwork.

Table 2 indicates the types of preservatives commonly used for different products and the minimum retentions considered acceptable. No such table can be exact or complete, however, for specifications vary somewhat and authorities are not always in complete agreement. The matter is further complicated by local conditions, the specific requirements of individual structures, the cur-

FIAT

toilet compartments

THERE'S A RIGHT COMPARTMENT FOR EVERY NEED!

Choose FIAT for beauty, durability, adaptability and ease of maintenance. Quality construction in a choice of four FIAT designs gives you the perfect toilet compartment for any building . . . whether new or old.



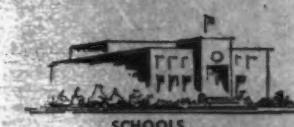
FACTORIES . . .



Architect James E. Garland specified FIAT Duro Flush Type Toilet Compartments (above) for North Hialeah Elementary School, Hialeah, Florida. Thompson-Polizzi Construction Co., Inc., contractors.

• Attractive smooth design of FIAT compartments creates easy-to-clean surfaces . . . so important in sanitary maintenance. Panels, pilasters and doors are made of two sheets of No. 20 gauge stretcher leveled steel, with fiber board sound deadener core cemented uniformly to the metal. There are four thicknesses of steel at the edges of all pilasters, giving added strength where needed. Theft-proof screws and concealed fastenings on chrome-plated hardware parts are exclusive FIAT features. Compartments are available in white, and a choice of eight colors in durable baked-on enamel finishes.

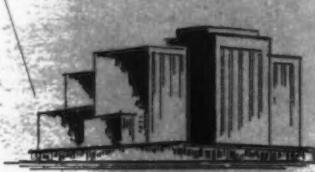
Write for catalog and address of your FIAT representative or
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SCHOOLS . . .



HOSPITALS . . .



OFFICE BUILDINGS . . .

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First in
Showers

FIAT METAL MANUFACTURING COMPANY
THREE COMPLETE PLANTS—ECONOMY • CONVENIENCE • SERVICE

Long Island City 1
New York

Franklin Park, Ill.
(Chicago Suburb)

Los Angeles 63
California

In Canada: Porcelain and Metal Products, Ltd., Orillia, Ontario

all 227 cooperative apartments in 17 days . . .

and a complete General Electric Kitchen Exhibit



ALL THE UTILITY, wall and base cabinets harmonize with G-E appliances. General Electric custom sink center has Textolite® Monotop. The G-E Kitchen Exhibit helped to sell many an apartment.



One of the inviting entrances to Franconia Village Apartments.



"WE SIMPLY OFFERED PROSPECTS MORE"

Berkel Associates report: "All of us agreed from the very beginning that the General Electric Kitchen was a *most important* factor in our over-all sales strategy. We wanted to offer people *more* for their dollar. General Electric certainly helped us to sell our entire cooperative in record time."

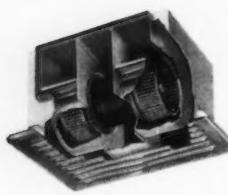
BERKEL ASSOCIATES. (Builders) From left to right: Messrs. Daniel Berley, Samuel N. Berley, Robert Katz, Lee E. Ellman.



Builders have proved that kitchens equipped with genuine Trade-Wind Clipper Ventilators are far easier to sell. There's a double reason for this. The quality construction and honest performance are features you instinctively "talk up." That makes the sales job easier. Furthermore, the use of a Trade-Wind implies that fine quality items have been selected elsewhere for the house.

Next time when you specify a kitchen ventilator remember this—Trade-Wind is built only to the highest quality standard—never down to a price.

DEPENDABLE AS THE TRADE WINDS



No. 2501 FOR AVERAGE ROOMS.

This popular ceiling model with 2 centrifugal blowers develops 425 cu. ft. per min.—ample power to keep kitchens, laundries and game rooms up to 2000 cu. ft. clean, cool and free from odors. 2-speed control switch.

WRITE FOR COMPLETE INFORMATION

Trade-Wind Motorfans, Inc.
5705 So. Main St. Los Angeles 37, Calif.
Please send literature on Trade-Wind Ventilators.

Name _____
Address _____
City _____ State _____



WOOD PRESERVATIVES

(Continued from page 190)

rent comparative cost and availability of different preservatives and treatments, and other factors. The table should not be followed blindly, but it should be used as a starting point in the study of what to require for a specific job.

It is not always practicable to secure lumber that has been treated under standard specifications, although a growing number of treating plants are prepared to supply pressure-treated lumber, plywood, or millwork in small quantities. Retail lumber dealers occasionally carry stocks of treated lumber and many of them can supply window sash that has been given the standard 3-min treatment and carries an official certification brand.

When commercially treated lumber is not available at reasonable cost, the material can sometimes be given a treatment after arrival on the job. Brushing the preservative on the wood at the building site is the simplest but not necessarily the cheapest method. It is about the least effective treating method and is not dependable for long protection. This method should be used only when more effective methods are impractical. Even then, no great increase in the life of the wood should be expected from it. Brushing preservative on the wood after it has been installed in a building is of little use because the hidden surfaces, which are ordinarily the first to be attacked, are not reached by the preservative.

The 3-min immersion treatment in type A2 preservative is simple and can be done at the building site if desired. All that is required is a tank large enough to permit the wood to be completely immersed. Certain precautions are necessary, however, in order to avoid serious trouble. Since the preservative solution is highly flammable, the material should be treated and then stored for drying in a place where an accidental fire would not endanger the building, other material, or the lives of workmen.

The preservative most commonly used, pentachlorophenol, is toxic to many people and may cause serious skin eruptions if brought into contact with

(Continued on page 198)



ALABAMA

Badham Insulation Co., Inc., Birmingham
Stokes Interiors, Inc., Mobile

ARIZONA

Fiberglas Engineering & Supply Co.,
Phoenix
Hall Insulation & Tile Co., Tucson

CALIFORNIA

Coast Insulating Products,
Los Angeles and San Diego
Cramer Acoustics, San Francisco and
Fresno

COLORADO

Construction Specialties Co., Denver

GEORGIA

Dumas and Searl, Inc., Atlanta

ILLINOIS

General Acoustics Co., Chicago

INDIANA

The Baldus Co., Inc., Fort Wayne
E. F. Marburger & Son, Inc., Indianapolis

IOWA

Kelley Asbestos Products Co., Sioux City

KANSAS

Kelley Asbestos Products Co., Wichita

KENTUCKY

Atlas Plaster & Supply Co., Louisville

MARYLAND

Lloyd E. Mitchell, Inc., Baltimore

MICHIGAN

Detroit Fiberglas Insulation Company,
Detroit

MINNESOTA

Dale Tile Company, Minneapolis

MISSISSIPPI

Stokes Interiors, Inc., Jackson

MISSOURI

Kelley Asbestos Products Co.,
Kansas City
Hamilton Company, Inc., St. Louis

NEBRASKA

Kelley Asbestos Products Co., Omaha

NEW JERSEY

Kane Acoustical Co., Fairview

NEW MEXICO

Fiberglas Engineering & Supply Co.,
Albuquerque

NEW YORK

Robert J. Harder, Inc., Lynbrook, L. I.
James A. Phillips, Inc., New York
Davis-Fetch & Co., Inc., Buffalo,
Rochester and Jamestown
Davis Acoustical Corp., Albany

NORTH CAROLINA

Bost Building Equipment Co., Charlotte

OHIO

The Mid-West Acoustical & Supply Co.,
Cleveland, Akron, Columbus, Dayton,
Springfield and Toledo

OKLAHOMA

Harold C. Parker & Co., Inc.,
Oklahoma City
Kelley Asbestos Products Co., Tulsa

OREGON

Acoustics Northwest, Inc., Portland
R. L. Elfstrom Co., Salem

PENNSYLVANIA

General Interiors Corporation, Pittsburgh
Jones Sound Conditioning, Inc., Ardmore

TEXAS

Blue Diamond Company, Dallas
Fiberglas Engineering & Supply Co.,
El Paso

Otis Massey Co., Ltd., Houston

Builder's Service Co., Fort Worth

UTAH

Utah Pioneer Corporation, Salt Lake City

VIRGINIA

Manson-Smith Co., Inc., Richmond

WASHINGTON

Elliott Bay Lumber Co., Seattle

WISCONSIN

Building Service, Inc., Milwaukee

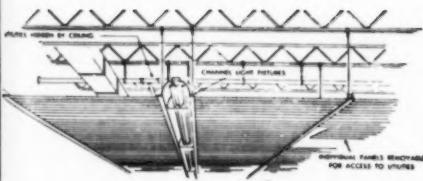
CANADA

Albion Lumber & Millwork Co., Ltd.,
Vancouver, B. C.

Hancock Lumber Limited,
Edmonton, Alberta



ADVANTAGES OF THE REYNOLDS ACOUSTICAL SYSTEM



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Panels are supported on aluminum angles and T-sections. Sound-absorbing material is laid on panels or attached directly to ceiling.

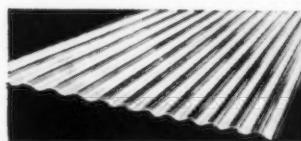
SEE "MISTER PEEPERS," starring Wally Cox, Sundays, NBC-TV Network.

ACOUSTICAL SYSTEM

OTHER REYNOLDS *lifetime* ALUMINUM INDUSTRIAL BUILDING PRODUCTS

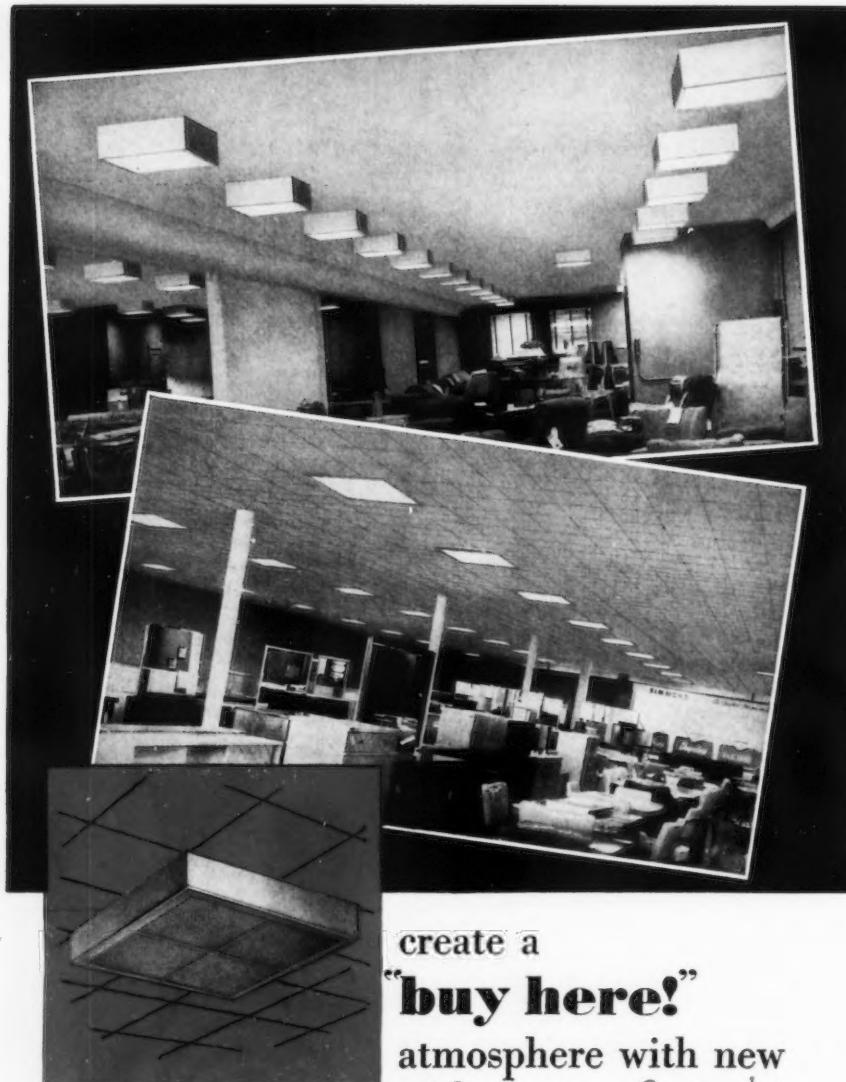


New Ribbed-Embossed Siding. Modern architectural beauty with all the advantages of aluminum. Rust-proof, corrosion-resistant, strong, light, heat-reflective and *low in applied cost*. Stipple-embossed finish. Sheets cover 32". 19 lengths from 5' to 13'10". Metal thickness .032".



Industrial Corrugated Roofing and Siding. Smooth finish .032" with extra deep corrugations for greater strength. Width coverage 32". 12 lengths from 5' to 12'.

For full data on these products call the nearest Reynolds office, listed under "Building Materials" in classified phone books of principal cities. Or write Reynolds Metals Company, Building Products Division, 2020 So. Ninth Street, Louisville 1, Kentucky.



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Guth Magic-lite 
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the magic combination of architectural beauty and sales-building lighting for contemporary store interiors.

GUTH MAGIC-LITE is well-shielded by a GRATELITE Louver-Diffuser. It transforms the direct light into softly flattering illumination, essential for good merchandising.

LOW ORIGINAL COST—LOW UPKEEP COST

Uses least expensive lamps—GrateLite Louvers are cleaned in 2 minutes.

VERSATILE

Mount singly or in patterns. Recess or surface. 24" or 12" square sizes.

May we send you our new
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THE EDWIN F. GUTH CO. ST. LOUIS 3, MO.
Leaders in Lighting since 1902

*Trademark
 **U.S. & Can. Pats. Pend.
 Trademark Registered



A.E.

WOOD PRESERVATIVES

(Continued from page 194)

skin or clothing, during treatment and handling of the freshly treated material. Impermeable gloves and aprons together with exercise of proper care by the workmen will help avoid trouble. The treated material should be allowed to become thoroughly dry and should be cleaned if gummy exudations are found on the surfaces, before any paint or other finishing material is applied.

Another treating method which can be applied locally when standard commercial treatment is for any reason impractical is soaking the wood for several days or longer in unheated solutions of type A1 or A2 preservative. Such treatment should give greater protection than brushing or brief immersion but will seldom approach the effectiveness of standard pressure treatments. The penetration and retention of preservative in long soaking treatment depend largely on the species of wood treated and its dryness.

The dry sapwood of the pines usually absorbs preservative readily, and fairly good penetrations are possible. The heartwood, however, is normally resistant to treatment and penetration in heartwood will generally be shallow. Most other woods are less absorptive than the pines and, therefore, less thoroughly impregnated under the same treating conditions.

Lumber in the fresh-cut green condition can be treated by long soaking in water-borne preservative. Another method is to apply the preservative in pasty or cream-like form to all surfaces and then solid pile the treated wood, covering it to prevent loss of moisture, for two or three months. Under these conditions the preservative penetrates by diffusion into the water of the green wood. Neither method is in wide use for buildings but either could be employed under conditions where other treatment is impractical, and where there is time to season the wood after treatment. These methods may also be used for structures that permit the use of the treated wood without seasoning.

It is highly desirable, regardless of preservative or treating method employed, to have the wood cut before it is

(Continued on page 202)

Weldwood movable partitions offer the matchless beauty of real wood

Easy to install and maintain. Simple interlocking feature makes rearrangement possible on a week end or overnight.

There is nothing that matches the warmth and beauty of *real* wood partition panels. When this natural beauty is combined with *low cost movability* it's a combination that is hard to beat. Virtually any wood face is available on order.

When the office is "on-the-move," unique metal keys which lock the panels together make it a simple matter to rearrange them as desired. There are no screws. Snap-on matching post cap between panels hides telephone and electric cables, easily removed for access. Special floor base unit cuts remodeling time and mess.

TYPES OF PANELS include cornice and ceiling height,

glazed and low railings. Wall sections include door, glazed and solid types. Door and wall panels may be interchanged without disturbing adjoining panels.

SIZES: Weldwood Partition Panel units come in 2', 2 $\frac{1}{2}$ ', 3', 3 $\frac{1}{2}$ ' and 4' widths. Standard movable partition heights are 7' 1", 8' 6", 5' 6" and 3' 8". Special heights to order.

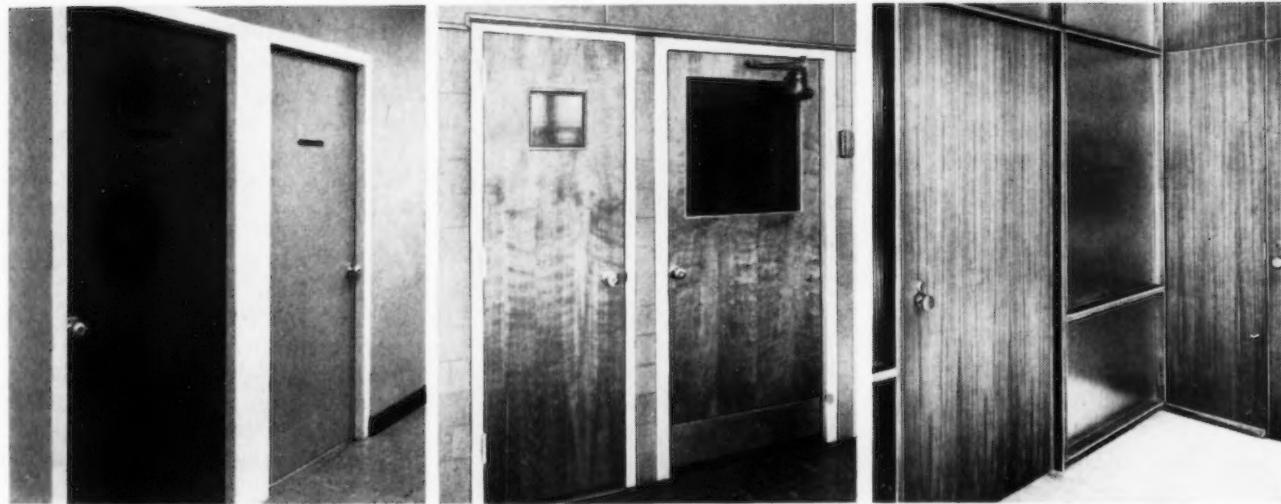
CONSTRUCTION: The panels contain the same fire-resistant mineral core which is used in Weldwood Fire Doors. It provides a noise barrier twice as effective as a 2 x 4 partition with metal lath, plastered both sides. Panels are easy to keep clean.

Weldwood hardwood partitions are *guaranteed for the life of the installation!*

Further information is available at United States Plywood or U.S.-Mengel distributing units everywhere.

Weldwood Fire Doors and Stay-Strate Doors combine beauty with safety

They are guaranteed for the life of the building



Weldwood Fire Doors in Lever House, New York City. These wood-faced doors carry the U.L. label for Class B and C openings. Should a fire break out, the mineral core is an effective fire-check. Arch: Skidmore, Owings & Merrill.

The light cutouts will not weaken the rigidity of these birch Weldwood Stay-Strate Doors installed at the Lake Hiawatha School, Troy Hills, N. J. They combine visibility with beauty. Arch: Emil A. Schmidlin.

American walnut Weldwood Fire Doors in the United Nations Building. The facing veneer on doors came from same flitch used for the paneling. Arch: W. K. Harrison, Director of Planning. Installed by: Murray Hill Woodworking Corp.

Weldwood®

PARTITION PANELS AND DOORS

United States Plywood Corporation
WORLD'S LARGEST PLYWOOD ORGANIZATION

Weldwood Building, 55 West 44th Street,
New York 36, N. Y.

and **U.S.-Mengel Plywoods, Inc.**
Louisville, Kentucky



DISTRIBUTING UNITS
IN 60
PRINCIPAL CITIES

United States Plywood Corporation
Weldwood Building, 55 West 44th Street,
New York 36, N. Y.

Please send me free literature on Weldwood Movable Partitions and Weldwood Fire Doors and Stay-Strate Doors.

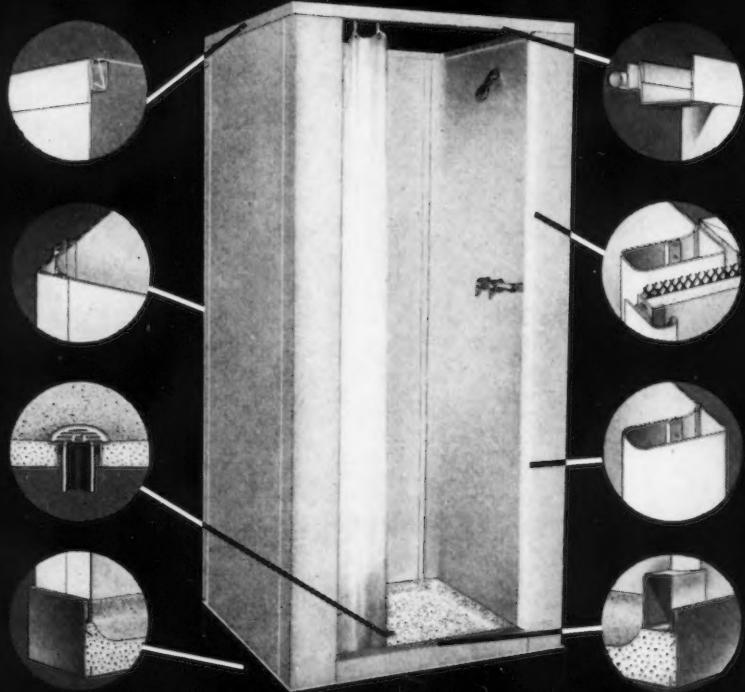
AR-12-53

NAME.....

ADDRESS.....

CITY..... STATE.....

THE *Cadet*



new FIAT shower with 9 design advantages!

FIAT literally dissected every cabinet shower made and listed features and faults alike . . . deliberately set out to design a shower cabinet superior to any . . . to make a product better than all of them combined. After four years, the great new CADET evolved as the fulfillment of the challenge . . . a shower cabinet that sets a new high standard for styling, simplicity and service.

CADET installation is simple, no chance for error . . . has an exclusive one-piece front for strength . . . a smooth, sanitary, cove construction . . . no exposed raw edges inside or out . . . valve panel reversible left or right . . . exclusive hollow stile construction . . . leak-proof without caulking . . . can be readily built in . . . easily installed slip-on top available.

Get all the FACTS . . . you'll specify only FIAT

Write the nearest FIAT plant today!

FIAT METAL MANUFACTURING COMPANY
THREE COMPLETE PLANTS—ECONOMY • CONVENIENCE • SERVICE

FIAT

Long Island City 1
New York

Franklin Park, Ill.
(Chicago Suburb)

Los Angeles 63
California

In Canada: Porcelain and Metal Products, Ltd. Orillia, Ontario



WOOD PRESERVATIVES

(Continued from page 198)

treated as nearly to its final dimensions as practicable. In most of the pieces treated, the preservative penetration is incomplete and a zone of unpenetrated wood remains in the interior. This is especially true with pieces containing both heartwood and sapwood, because the heartwood of most wood species is resistant to penetration.

Cutting wood after treatment will probably expose the interior zone of untreated wood and make it vulnerable to attack. It is possible for both insects and fungi to work in the untreated interior zone if they gain entrance, but they are repelled if the treated zone is unbroken. Brush or dip treatment can be applied to the surfaces exposed by cutting and will give some protection, but seldom as much as the original treatment.

FIREPROOFING

The resistance of wood to ignition and rapid spread of flames can be greatly increased by impregnation with substantial amounts of fire-retarding chemicals. Most formulations of such chemicals also provide protection from insects and fungi. Numerous chemicals are fire-retarding to some degree but only a few are in common use. Cost, color, corrosiveness, and other considerations exclude many that otherwise might be used. The phosphates of ammonia are highly effective, and borax, boric acid, zinc chloride and ammonium sulfate find considerable use in fire-retarding formulations.

The chemicals can be used singly but best practice is to use mixtures designed to keep cost down, provide protection against insects and fungi, and minimize the various disadvantages of individual chemicals. The standards of the American Wood-Preservers' Association include 3 formulations of fire-retarding chemicals, as follows:

- Chromated zinc chloride (FR) consists of 80 per cent chromated zinc chloride, 10 per cent ammonium sulfate, and 10 per cent boric acid.
- *Minalith* contains 10 per cent di-ammonium phosphate, 60 per cent ammonium sulfate, 10 per cent sodium tetraborate, and 20 per cent boric acid.

(Continued on page 207)

Specify Edwards and Be Sure

America's schools run more smoothly . . . America's school children are better protected thanks to Edwards.



Edwards Automatic Clock and Program Control Systems, models of precision engineering, regulate school traffic with split-second accuracy. This ingenious system requires no master clock, no mercury pendulums, rectifiers, condensers or radio tubes. Built around the famous dual-motored Telechron movement, Edwards Clocks are synchronized to ever accurate incoming alternating current...one or a hundred timepieces keep perfect time together. Virtually error-free, they run for years without costly servicing. Write for Bulletin "CL."



TRIM, MODERN, EFFICIENT:

Edwards Fire Alarm and Watchman's Systems are chosen by leading architects to protect America's schools, hospitals and important buildings. Write for Bulletin "FA."

EDWARDS

protects...everywhere!



WOOD PRESERVATIVES

(Continued from page 202)

- Pyresole contains 35 per cent zinc chloride, 35 per cent ammonium sulfate, 25 per cent boric acid, and 5 per cent sodium bichromate.

All of these formulations, when properly used, will give good fire protection and a considerable degree of protection against insects and fungi. From 2½ to 5 lbs of chemical (dry basis) per cu ft of wood treated are needed to give high protection from ignition and burning. The lower quantities are suitable for large sizes of timber and the higher quantities for inch lumber and thinner. The important consideration is the concentration of chemical in the wood.

Since a higher percentage of the volume is penetrated in thin than in thick material, a higher retention is required to give the same concentration of chemical in the treated zone. Pressure treatment is required to inject enough chemical into most woods to give the desired resistance to fire.

Wood that has been adequately treated with an effective fire-retarding chemical solution may be charred to uselessness by continuous exposure to a fire but the flames will not spread far beyond the heated zone. When the heat source is removed, the wood will cease to burn.

Fire-retarding treatments are not cheap enough for general use in dwellings, but for public buildings, office buildings, and similar structures where resistance to fire is of maximum importance or is required by law, such treatments can be both practical and economical. Fire-retardant wood in a structure, like steel and concrete, will not prevent the contents of the building from burning, but neither will it contribute fuel to the flames. Since the chemicals used are soluble in water, their protective effectiveness will gradually disappear from treated wood that is frequently or continuously exposed to the leaching action of water.

A high degree of resistance to the spread of flames over wood surfaces can be provided by coating the surfaces thickly with fire-retarding paints. There are some good commercial fire-retarding paints on the market and formulas are available for mixing others, but there

(Continued on page 210)

TO COMBAT CORROSION

Specify TAPECOAT®

...the Original Coal Tar

Tape Protection for Pipe,
Pipe Joints, Couplings

and Tanks



TAPECOAT is a coal tar coating with a tar-saturated, close-woven fabric as a carrier for easy application, providing a natural protection against corrosion.

TAPECOAT serves as both bond and protection...requires no foreign adhesive.

TAPECOAT resists moisture, acids, alkalis, soil stress, electrolysis, chemical fumes, fly ash, salt water, salt-laden air, barnacles and other severe corrosive and abrasive conditions.

TAPECOAT is clean to handle and easy to apply by spiral or "cigarette" wrapping with the use of a torch to bleed the coating for a bond to the surface. It cuts maintenance and replacement costs.

SIZED TO THE JOB

TAPECOAT comes in rolls of 2", 3", 4", 6", 18" and 24" widths to meet varying requirements.

TAPECOAT has proved its dependability for gas and oil companies, railroads, telephone companies, air lines, ship builders and operators, water and sewage works, chemical and industrial plants, engineers and contractors...in combating corrosion both underground and above ground.

PROVED IN
SERVICE
SINCE 1941

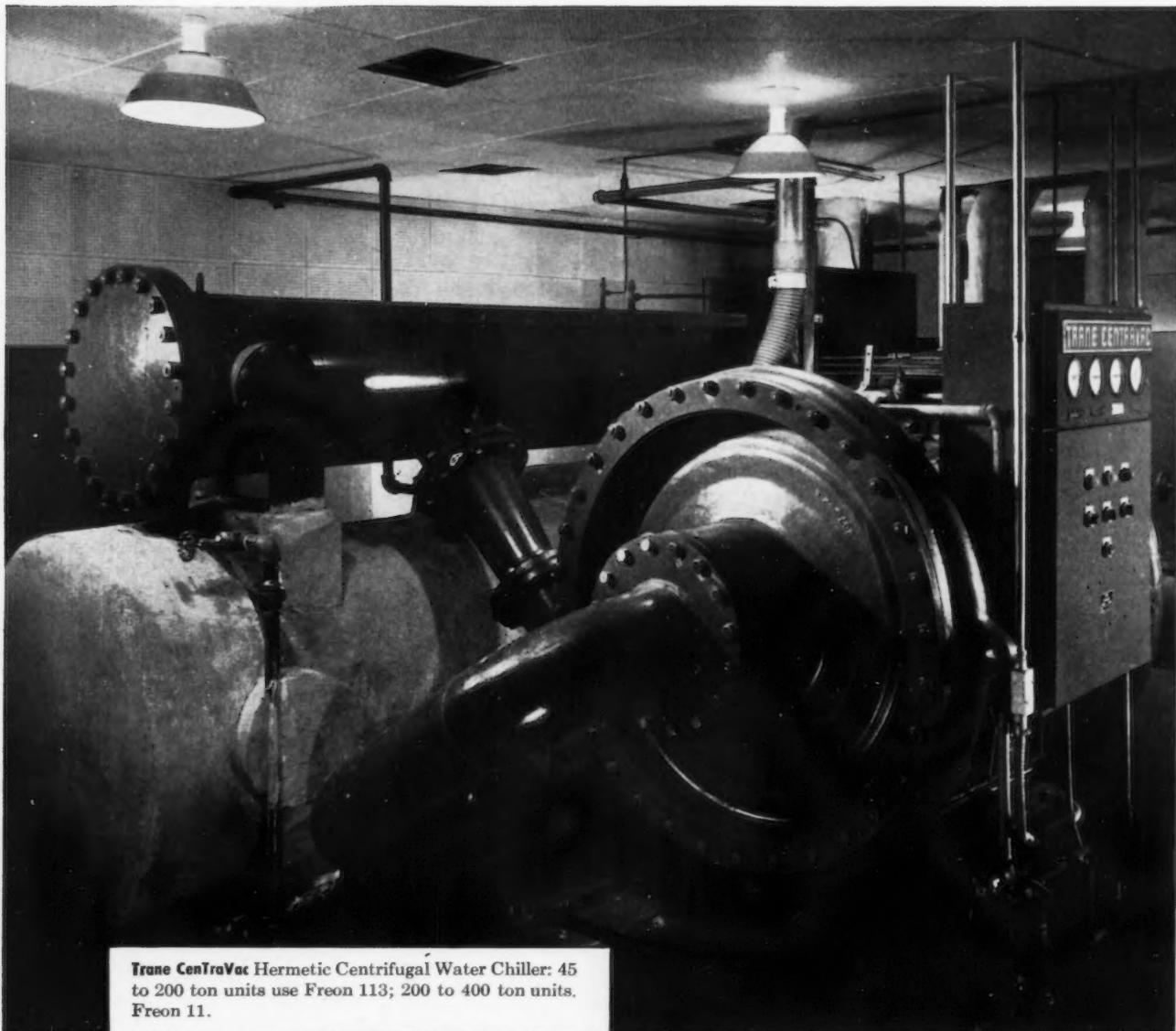
Write for descriptive brochure and prices

The TAPECOAT Company

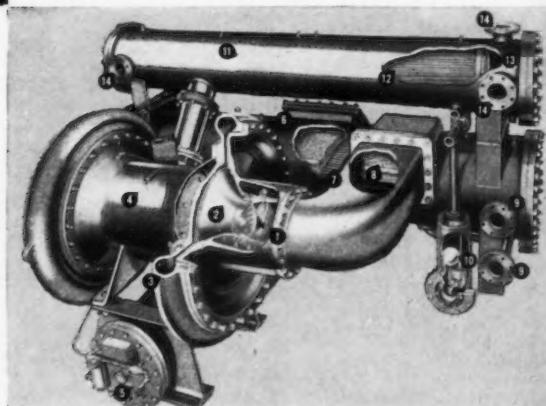
Originators of Coal Tar Tape Protection

1547 Lyons Street, Evanston, Illinois

Trane CenTraVac centrifugal water stable operation down to



Trane CenTraVac Hermetic Centrifugal Water Chiller: 45 to 200 ton units use Freon 113; 200 to 400 ton units. Freon 11.



- 1) Vane control—permits operation down to 10% of rated capacity.
- 2) Impeller—assures high efficiency.
- 3) Volute housing—smooth gas flow.
- 4) Motor—hermetically sealed, eliminates shaft seals and gear boxes, gives quieter operation.
- 5) Lubrication system—fully protected from failure.
- 6) Evaporator—semi-flooded type.
- 7) Tube bundle.
- 8) Eliminator—prevents liquid carry-over.
- 9) Evaporator water connections—2, 3 or 4 pass, give flexibility for all water flow conditions.
- 10) Float valve—refrigerant flow control.
- 11) Condenser.
- 12) Tube bundle.
- 13) Water boxes—marine type.
- 14) Water connections.

chiller—assures 10% of capacity!

In any air conditioning system the design load exists only part of the time. The CenTraVac meets smaller load requirements by automatically throttling down smoothly—and in infinitely small increments—to as low as 10% of rated capacity. It allows, for the first time, partial operation without a large penalty in operating costs! For example:

*At 80% load, power consumption is 77%;
at 50%, it requires 50% power; at 10%
load it requires only 22% power.*

It is the only unit that permits *stable* operation over such a wide range (100% down to 10% of capacity).

Yet, wide capacity control is only part of the CenTraVac story. Here are more features that make the CenTraVac a wise choice for jobs from 45 tons up.

Automatic, unattended operation. Except where required by local codes, there is no need for a special engineer. Push a button to start. From there on the CenTraVac starts, stops and modulates automatically.

No costly multi-level base required. May be set directly on a level concrete floor of sufficient strength to support unit. No foundation bolts required.

Now, with the CenTraVac, you can design a system that automatically adjusts to varying cooling requirements with power savings in almost direct proportion to load variations.

Hermetic design. Eliminates need for shaft seals, gear box, heavy thrust bearings and couplings. Minimizes danger of costly refrigerant loss. Eliminates constant supervision and maintenance.

Protection against maintenance and installation errors. CenTraVac has only two main bearings. It is designed to operate only when full oil pressure is applied to both bearings. Compressor is factory aligned, eliminating this problem in the field.

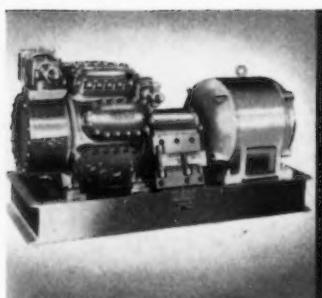
Integral load-limit control. CenTraVac has built-in load-limit control for full protection against over-load under all conditions.

Packaged water chiller. CenTraVac is a complete unit. All parts are shipped together including refrigerant and oil charge. Installation requires a minimum of time.

Inspect a CenTraVac installation

Your local TRANE Sales Representative will be pleased to arrange for you to see a CenTraVac in operation. Simply give him a call. For further data on the CenTraVac—including features, mechanical and engineering specifications, capacities, controls and roughing-in dimensions—contact your TRANE Sales Representative or write TRANE, La Crosse, Wis., for 42-page CenTraVac Bulletin DS-399.

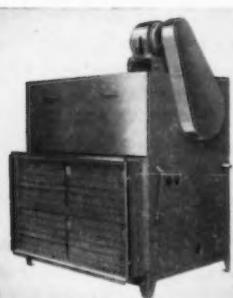
OTHER TRANE AIR CONDITIONING EQUIPMENT FOR JOBS OF ALL SIZES



Reciprocating Compressors . . . cap. up to 50 tons. Automatic cylinder unloading saves power, permits multistep operation to 25% capacity.



UniTrane room units utilize chilled or heated water. Individually controlled for year-round air conditioning. Cabinet or recessed models.



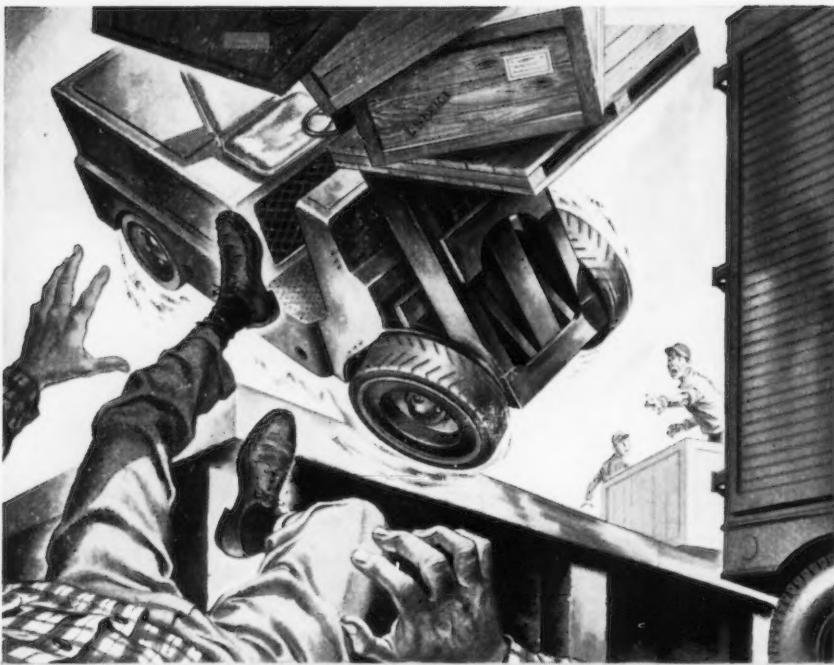
Climate Changers . . . year-round air conditioners that heat, cool, humidify, dehumidify, filter and circulate air. Capacities: 450 to 22,000 cfm.



Cold Generators . . . packaged water chillers. Completely wired, piped, charged and tested at factory. Ten sizes from 10 to 100 h.p.

TRANE

Manufacturing Engineers
of Air Conditioning, Heating
and Ventilating Equipment



... THEN WE INSTALLED ALGRIP And Ended Slipping Accidents And High Insurance Costs!



It happened at a large industrial plant, where oil and grease on a loading platform created a constant hazard. A lift truck skidded on the slippery surface, toppled from the platform's edge, and crushed the operator to death.

ELIMINATED:
Accidents like this
—which cost a
man his life.

SAVED:
\$20,000 in Additional Compensation Premiums.

Then A.W. ALGRIP Abrasive Rolled Steel Floor Plate was installed on the platform—and slipping accidents ended at once. For ALGRIP is truly non-slip—even on steep inclines! Hundreds of tiny abrasive particles in each square foot of ALGRIP converted the slippery, dangerous platform into a hard gripping, anti-skid surface—safe for men and vehicles alike.

IMMEDIATE SAVINGS were obtained in three ways: (1) *No more costly, morale shattering accidents.* (2) *Faster handling of loads.* (3) *Workmen's compensation insurance premiums were substantially reduced by more than enough to pay for the ALGRIP installation.*

END SLIPPING ACCIDENTS THAT STEAL PRODUCTION AND KITE INSURANCE RATES

A.W. ALGRIP—only abrasive rolled steel floor plate in the world—pays for itself in savings from safety. Tough abrasive particles (same kind used in grinding wheels) put hundreds of tiny safety-brakes in every footprint—make it virtually impossible to slip even on steep inclines. ALGRIP doesn't wear smooth either—wear only exposes new particles. And tough rolled steel makes this floor plate stronger than other abrasive floorings. For safety at a saving, get the full ALGRIP story today. Write for our new Booklet AL-21—without obligation.

Over 125 Years of Iron and Steel Making Experience.

ALGRIP Abrasive Rolled Steel Floor Plate
ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

Other Products: A. W. SUPER-DIAMOND Floor Plate • Plates • Sheet • Strip
(Alloy and Special Grades)



WOOD PRESERVATIVES

(Continued from page 207)

has not yet been sufficient standardization or official acceptance to justify specific recommendations.

In general, these are interior paints, not durable when exposed to the weather. They must be applied thickly, in order to be effective, and they must be kept in good condition. The protection, of course, extends to only the surfaces coated. The hidden surfaces that cannot be reached when the paint is applied are not directly affected, although the coating serves to keep the fire from penetrating readily to them.

Such a brief discussion of wood protective materials and methods can only be considered an introduction to the subject. It cannot provide all the information required for the application of general principles to specific problems. The architect or engineer in need of further information on the subjects raised in this article may find some of the following publications of value.

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2. American Wood-Preservers' Association: Proceedings, (published annually).
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4. Anonymous: Preventing damage to buildings by subterranean termites, and their control, U. S. Dept. Agr., Farmers' Bulletin 1911 (April 1949).
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7. Snyder, Thomas E.: Preventing damage by Lyctus powder-post beetles, U. S. Dept. Agr., Farmers' Bulletin 1477, (Feb. 1938).
8. Snyder, Thomas E.: Control of non-subterranean termites, U. S. Dept. Agr., Farmers' Bulletin 2018 (Sept. 1950).
9. Van Kleeck, Arthur: Fire-retarding coatings, Forest Products Laboratory, Report R1280 (Feb. 1953).

In 1953, over 500 building product advertisers (two-thirds of all advertisers using one or more of the three leading architectural magazines) are putting *Architectural Record* ahead of the field by more than 1,000 pages of advertising.

However, advertising leadership is but one clue to media value. Equally important to buyers of advertising are the reasons for the Record's leadership in advertising volume month after month, year after year:

1. Editorial content designed 100% for architects and engineers:

Architectural Record is the one magazine edited in its entirety for the architects and engineers who control 80% of today's building dollars.

2. Editorial anticipation of market activity: the Record's editorial content is *timed* and *balanced* accurately by means of *Dodge Reports of building planning activity* to be of constant maximum value to architects and engineers in terms of the work on their boards . . . and to advertisers in terms of their market opportunities.

3. Editorial breadth: The Record's editorial service takes in the full range of building design—residential and non-residential, small and large—which constitutes the practice of architects and engineers.

4. Reader preference: architects and engineers have voted *Architectural Record* their preferred magazine in fifty out of fifty-six readership studies (sponsored by building product manufacturers and agencies) for which results are available—and in all sixteen such studies since January 1952.

5. Dodge-documented market coverage: *Dodge Reports of building activity*—available exclusively to *Architectural Record*—document the Record's coverage of the architects and engineers responsible for over 85% of all architect-designed building—residential and non-residential, small and large.

6. Largest total architect and engineer circulation: *Architectural Record* serves the largest audience of architects and engineers ever assembled by a technical magazine.

7. Lowest cost: you reach the largest architect and engineer audience in *Architectural Record* at the lowest cost per page per thousand.

You will be right with the Record in 1954.



Architectural Record

"workbook of the
active architect
and engineer"

119 West 40th St., New York 18, N. Y. OXFORD 5-3000

(Continued from page 173)

nearly double the recommended minimum of daylight on dark days, in all areas of the room.

With the development of this daylighting system and the removal of perhaps the major obstacle to less-institutionalized planning and decoration of classrooms, Dr. Boyd and his associates set about to exploit the new freedom to the fullest. With the cooperation of

some two dozen interested manufacturers, they began to plan and equip their classroom along the lines they had envisioned. Their results are shown in the photographs reproduced here.

The classroom was planned as a self-contained fifth-grade schoolroom and all furnishings and equipment are designed and scaled for children of this age. The room is 29 by 29 ft, with a 10½-ft ceiling. The entire east wall is covered with 1- by 2-in. rectangular mosaic tile in a rich cocoa color. In contrast, the north and west walls are of natural finish birch

plywood. One section of the north wall is covered with a panel of milk-white glass on which children can draw and paint. Another portion is occupied by surface-mounted green chalkboards which can be reversed to provide cork tackboards. The wood-paneled west wall has permanent green chalkboards and a strip of peg-board for displays. The ceiling is off-white plastic-faced acoustical tile set on T-bars. The floor is white rubber tile with mottled green veins. Desks and chairs are contour moulded and have metal tube legs set at angles to permit easy stacking. Color-splashed non-inflammable drapes mounted on tracks can be drawn to cover the entire south wall fenestration, and another drape track-mounted halfway into the room can be drawn parallel to the window drapes to provide a darkened area for audio-visual operations without disturbing other classroom activities. Artificial lights in the ceiling are controlled by a photo cell and turn on automatically when daylighting falls below minimum requirements, as on stormy days. Comfortable year-round temperatures are provided by a heating and ventilating unit beneath the window sill.

Manufacturers whose cooperation helped in the development of the classroom include in addition to Kimble Glass Co. (subsidiary Owens-Illinois Glass Co.):

ARCHITECTURAL MATERIALS AND EQUIPMENT

- *Adjustable Cabinets, Inc.*, 400 Scajquada St., Buffalo 11, N. Y., Wall cabinets, floor cabinets, carpenter bench, reading benches
- *Austrial Sales Co.*, 101 Park Ave., N. Y. C., Easel boards
- *Automatic Electric Sales Co.*, 1033 W. Van Buren St., Chicago, Ill., Telephone system
- *Brunswick-Balke-Collender Co.*, 623-633 So. Wabash Ave., Chicago 5, Ill., Tables, chairs, teacher's desk, students' desks, folding stage
- *Congoleum-Nairn, Inc.*, 195 Belgrave Dr., Kearny, N. J., floor covering
- *Lok Products*, 5109 San Fernando Rd., West Los Angeles 39, Calif., Supports for ceiling tile
- *Minneapolis Honeywell Regulator Co.*, Director of School Activities, Minneapolis, Minn., Temperature Controls
- *Mosaic Tile Co.*, Zanesville, Ohio, Mosaic tile
- *Herman Nelson Unit Ventilator Sales, American Air Filter Co., Inc.*, Louisville 8, Ky., Unit ventilator and cabinets

(Continued on page 218)



Cabot's Modern Finishes For Modern Design

When Semmens & Simpson, recipients of the Gold Medallists Massey Committee Architectural Award, designed this interesting church — St. Anselm's, Vancouver, B.C., Canada, they specified Cabot products throughout the building.

Exterior Shakes:
Cabot's #241 Bleaching Oil

Interior Roofing:
Cabot's #0-3 Glacier Blue Stain Wax and #0-15 Long Island Gray

Laminated Members:
Exterior — Cabot's #325 Redwood Stain
Interior — #0-6 Redwood Stain Wax

Mahogany:
Exterior — Cabot's #247 and #344 Creosote Stain
Interior — #0-15 Long Island Gray Stain Wax

Cross:
Cabot's Double White
Stonework behind altar treated with Cabot's Clear Cement Waterproofing.

We will be glad to send you Color Cards and Literature on the above products.

Samuel Cabot Inc.
1229 Oliver Bldg., Boston 9, Mass.



SKYTROL*

a product of research in toplighting

• The picture was taken at Pittsburgh Corning's Daylighting Research Center. Better than words, it shows the excellent daylighting made possible with SKYTROL Glass Blocks—the new toplighting medium developed by Pittsburgh Corning.

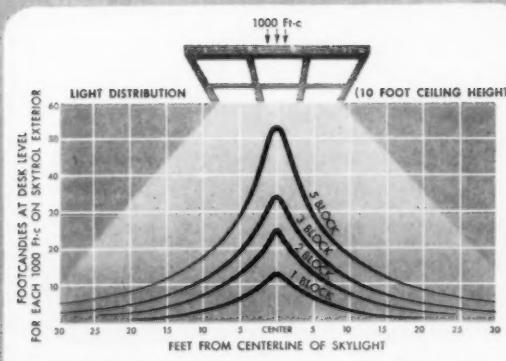
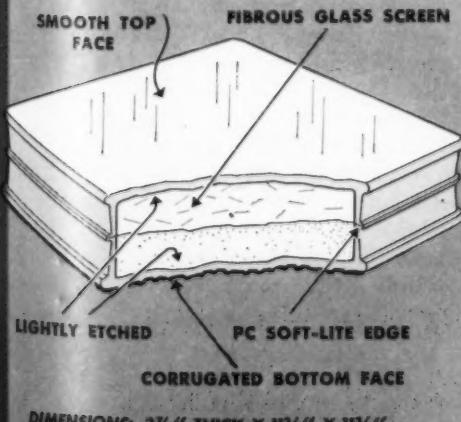
To prove the effectiveness of these blocks, PC engineers use a unique daylighting survey method employing 20 photocells and 20 light meters. Instantaneous readings are automatically recorded throughout the day. Thus a running record of SKYTROL performance in various parts of the room is prepared that takes into account the effect of sun angle and other exterior conditions.

The illumination level is very high in this room, but the light is so diffused that it is a delight to work here. The problems of condensation, heat loss and heat gain are practically eliminated, because SKYTROL blocks have *twice* the insulation value of an ordinary skylight.

Write today for more information about SKYTROL Blocks for toplighting. Just fill in the coupon.

**Pittsburgh Corning
Corporation**
PITTSBURGH, PA.

*T. M. Reg. Applied For.



Light distribution—Even one small 5-block wide Skytrol panel puts 22 footcandles on a desk top 8 feet from the panel centerline on an average overcast day.



Pittsburgh Corning Corporation
Dept. C-123, One Gateway Center
Pittsburgh 22, Pa.



Please send me more information about
PC SKYTROL Blocks for toplighting.

Name

Title

Firm

Address

City Zone State

(Continued from page 214)

- Owens-Corning Fiberglas Co., Nicholas Bldg., Toledo, Ohio, Ceiling tile, draperies, sound control products
- C. H. Rice Co., Union City, Ind., Shades for glass ceiling panels
- U. S. Plywood Corp., 55 W. 44th St., N. Y. C., Plywood
- F. W. Wakefield Brass Co., Vermilion, Ohio, Lighting fixtures

- Weber Costello Co., Chicago Heights, Ill., Chalkboards

MISCELLANEOUS EQUIPMENT AND SUPPLIES

- Admiral Corp., Chicago, Ill., Television receiver
- American Crayon Co., 41-26 43rd St., Long Island City, N. Y., Crayons, chalks, paints, erasers, art paper
- Bell and Howell, 7100 W. McCormick Rd., Chicago 45, Ill., Movie projector
- Columbia Records, Inc., 799 Seventh Ave., N. Y. C., Record player

- F. E. Compton & Co., 1000 N. Dearborn, Chicago, Ill., Encyclopedia
- A. B. Dick Co., 5700 W. Touhy Ave., Chicago 31, Ill., Spirit duplicator
- A. J. Nystrom & Co., 3333 N. Elston, Chicago, Ill., Maps, globe
- Radiant Mfg. Corp., 2627 W. Roosevelt Rd., Chicago, Ill., Projection screen
- Standard Electric Time Co., Springfield, Mass., Clock
- Viewlex, Inc., 35-01 Queens Blvd., Long Island City, N. Y., Slide projector

ELECTRICAL HEATING TAPE

A newly developed heating tape is reported to provide practical applications for new home construction and conversion. *Ribbon Heat* has been designed to provide driveways and walks free from snow, sleet and ice. The material is flexible, and can be inbedded in black top or concrete, or installed on overhanging eaves, gutters and downspouts

Hospitals are permanent... and they need piping that endures!



CLOW (THREADED) CAST IRON PIPE IS USED FOR ALL WASTES, VENTS AND DOWNSPOUTS IN THE NEW WING AND HALLS OF THE BEAUTIFUL OAK PARK HOSPITAL FOR THE SISTERS OF MISERICORDIA, OAK PARK, ILLINOIS. ARCHITECTS: SCHMIDT-GARDEN & ERIKSEN. PLUMBING CONTRACTOR: W. T. MAHONEY & SONS.

Add permanence to all buildings with CLOW (threaded) Cast Iron Pipe

Modern hospitals are today's most urgent building need. Because our hospitals will be as vital tomorrow as they are today, they are being built for strength and permanence.

In plumbing, for example, more and more architects and contractors choose CLOW (threaded) Cast Iron Pipe for all downspouts, vents, and waste lines. They know that CLOW Cast Iron piping will last the life of the building because of its remarkable resistance to corrosion.

They know, too, that installation cost and yearly upkeep will be gratifyingly low.

We will be pleased to give detailed answers to inquiries at any time.

JAMES B. CLOW & SONS

201-299 North Talman Avenue • Chicago 80, Illinois



A COMPLETE LINE FOR ALL PIPING NEEDS

CLOW (threaded) Cast Iron Pipe has same O.D. as steel pipe, is available with plain or threaded ends, in 3, 4, 5, 6, 8, and 10" sizes in 18' random lengths. Also available with integral calcining hub on one end (other end plain) in 18' random lengths in 4, 6, and 8" sizes.

CLOW CAST IRON PIPE CAN BE...



on the job, with ordinary
tools of the piping trade.

WHOLESALE PLUMBING AND
HEATING SUPPLIES

Publishers of the CLOW Bulletin

Heating tape can be used in a variety of protective applications for homes

to prevent damage to roofs and walls. It can also be wrapped around any exposed piping to prevent freezing and damage to piping, thus helping to obviate the necessity of draining water lines during the winter. The tape is available in standard lengths of from 20 to 60-ft for 110 v. service, and from 40 to 120-ft for 220 v. service. Cox & Co., Inc., 115 E. 23rd St., New York, N. Y.

MASTER TV SYSTEMS

Especially designed for old or new apartment houses, a new *B-T Master Antenna System* is reported to be far less costly than previous installations. Although amplified, the systems have been simplified in construction so that they can be installed by any TV service organization or contractor. Systems can be purchased outright from the installer. *Blonder-Tongue Laboratories, Inc.*, 526-536 North Ave., Westfield, N. J.

(Continued on page 222)



This view of the Central Sterile Supply floor of the Kitchener-Waterloo Hospital, Kitchener, Ontario, Canada, shows a Castle solid Monel cylindrical autoclave, two rectangular autoclaves lined with Nickel-clad steel, and a hot air sterilizer recess in the wall behind a protective partition of armour plate glass. They are operated by remote control from a desk immediately outside the area.

"A One-Jump-Ahead Hospital"

They knew what they wanted — the officials of the Kitchener-Waterloo Hospital — when plans were made for their "One-Jump-Ahead Hospital."

Everything was to be up-to-date and designed for maximum efficiency.

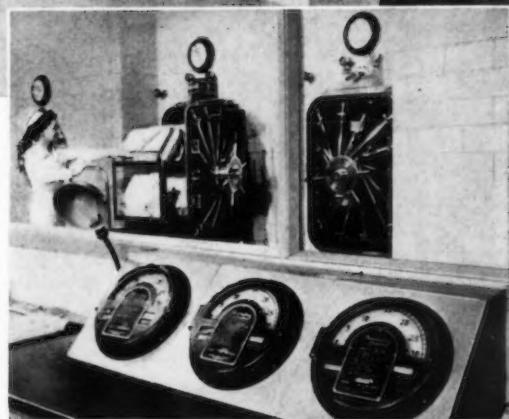
The Pharmacy and Central Sterile Supply Systems, for instance, were combined administratively under the chief pharmacist. And they were laid out so that either department could be easily reached by means of a spiral stairway.

One of the widely discussed features of this department is the Central Sterile Supply.

Here a Castle cylindrical autoclave of solid Monel® and two rectangular autoclaves lined with Nickel-clad steel are operated by remote control. All trays and rack assemblies used in this section are also made of Monel.

Why Monel?

Monel is hard and tough. It resists corrosion by lactic and other acids, by alkalies and



Close-up view of remote controls and autoclaves. Wilmot Castle Co. recommended Monel for the sterilizers because of its good appearance, corrosion resistance, and long life.

saline solutions. It is not subject to stress-accelerated corrosion and it can't dezincify. Rapid and repeated variations in pressure and temperature do not affect it. And it is easy to keep clean.

The Hospital Planning and Engineering Division of the Wilmot Castle Company worked with the architect and hospital officials in developing this new concept for this department in their "One-Jump-Ahead Hospital." And they will be glad to help you in planning installations. For information on their complete line of sterilizers write the Wilmot Castle Co., Rochester 7, N. Y. And ask them for a copy of "Pharmacy and Sterile Supply Combined at Kitchener-Waterloo Hospital."

THE INTERNATIONAL NICKEL COMPANY, INC.
67 Wall Street
New York 5, N. Y.

Inco Nickel Alloys



Monel...for immunized sterilizers

(Continued from page 218)

CONDUCTIVE TILE FLOORS

To meet the threat of anesthetic explosions caused by static electrical charges in hospital operating rooms, American-Olean Tile Co. has introduced a new resistance-controlled ceramic flooring material. Called *Conduct-O-Tile*, the new flooring consists of small black, ceramic tiles especially developed to



Conductive floor tile helps guard against operating room explosions

series
"440"

NATIONAL LOCK set
Patent Applied

**budget-priced lock
for every home in the block**

Beauty

Security

Trouble-free performance

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Merchant Sales Division

50th Anniversary

ground electrical charges safely. It is recommended for floors in operating rooms, delivery rooms, corridors outside these rooms, and areas where anesthetics are stored. The new tile conforms to the recommendations of the National Fire Protection Association for maximum allowable resistance for control and dissipation of static electricity. It is manufactured in 11/16 in. squares. Compounded of a vitreous carbon mixture, it is said to be as impervious, waterproof, fireproof and stainproof as the finest grade of ceramic tile. Maintenance costs are described as extremely low. The color is permanent. There is no carbon dust on top and no carbon is tracked around. The tile is said to make it possible to retain qualities of former types of installations utilizing colors and patterns that minimize eyestrain, simply by introducing the black conductive tiles into patterns. These floors can thus combine suitable colors and patterns for brightly lighted operating rooms with the safety of a conductive floor. Spacing between conductive tiles is governed by local safety and fire regulations. However, the NFPA recommends "a floor surface that has no non-conductive-elements more than 1/4 in. from a conductive element."

The floors should be installed in the entire operating suite including the corridors within the suite and fifteen ft along the approaches to rooms where hazardous gases are used. Metal dividing strips are not needed, and metal reinforcing is not necessary for conductive purposes. It is required in installations over wood sub-flooring. In such cases, a 3 by 3 in. mesh, 13 gauge welded steel or galvanized iron wire should be specified. The new flooring is installed like other ceramic tile, but Carbon black is added to the mortar setting bed. *American-Olean Tile Co., Lansdale, Pa.*

NEW ACOUSTICAL SYSTEM

A method for reducing noise in large industrial areas, the *Reynolds Lifetime Aluminum Acoustical System* consists of perforated, corrugated aluminum panels suspended on aluminum angles. These form a suspended ceiling, with glass fiber insulation either placed directly on top of the panels or separated from them and attached above to the existing ceiling, leaving space for ventilating ductwork or other installations. It is reported that this combination of aluminum panels and glass fiber insula-

(Continued on page 226)

TOPS IN TOPLIGHTING



New drafting room of architects, DAN R. SANDFORD & SONS, KANSAS CITY, MISSOURI

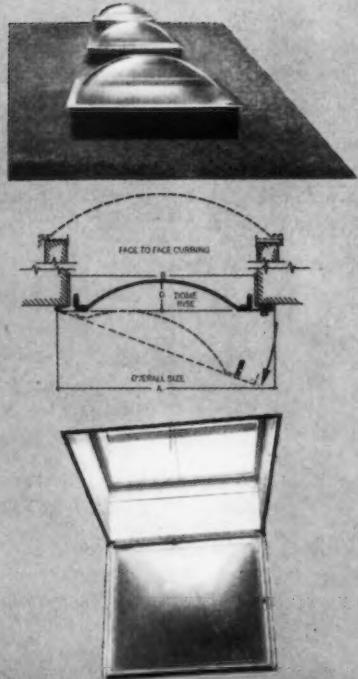
Wascolite skydomes and ceiling domes

When you specify Wascolite Skydomes for home, school, industrial or other installations . . . specify Wascolite Ceiling Domes to highlight your interior design. White translucent Ceiling Domes not only admit diffused daylight, but also conceal ceiling wells and provide added insulation. If desired, they can be used to conceal electric lighting fixtures — and thus serve as a source of both natural and artificial light.

Wascolite Ceiling Domes are prefabricated — can be used in combination with either clear colorless or white translucent Wascolite Skydomes. Finished in white enamel, they fit flush to the ceiling and are hinged to permit easy installation and opening.

Available for use with square, rectangular or circular Wascolite Skydomes.

Wascolite Ceiling Domes are made by the Wasco Flashing Company — makers of the famous Wasco Flashings, Wascolite Skydomes and the new Wascolite Ventdomes. For further information see Sweet's or write:



wascolite  **skydomes**

WASCO FLASHING COMPANY
82 Fawcett Street, Cambridge 38, Mass.

May it always be said of you... "THE ARCHITECT KNEW BEST"



ALWAYS SPECIFY WRIGHT RUBBER TILE

Your judgment in specifying one floor over another must ultimately stand the test of customer satisfaction.

Why gamble your own good reputation? You can specify Wright Rubber Tile with the confidence that here is the world's finest floor covering . . . made to stand 100 years of normal wear.

This is the miracle flooring you've been hearing about. Being non-porous, it repels dirt. Being highly resilient, it resists damage and absorbs sound. Being uniform in color and quality from top to bottom, it has no surface veneer to wear off, and so stays smooth and beautiful throughout its long life.

Economical—Because of its exceptional durability, cost per year of Wright Rubber Tile is less even than inferior floor covering.

Versatile—Because of its high resistance to damage, Wright Rubber Tile is ideal for all types of construction, industrial, commercial and residential. Twenty-three decorator colors to choose from.

Easily Maintained—All floors require maintenance, but Wright Rubber Tile requires less than any other.

We invite you to compare Wright Rubber Tile with any floor covering on the market. Send for a free sample. Then specify Wright Rubber Tile with complete confidence.

WRIGHT MANUFACTURING CO.
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FLOORS OF DISTINCTION

- ♦ WRIGHTEX — Soft Rubber Tile
- ♦ WRIGHTFLOR — Hard Surface Rubber Tile
- ♦ WRIGHT-ON-TOP Compression Cove Base
- ♦ WRIGHT VINYL TILE

AE PRODUCTS

(Continued from page 222)

tion effectively absorbs sounds at all frequencies and provides a fire resistant acoustical system of high efficiency.

In addition to providing a noise reduction coefficient of up to .90 the glass fiber blanket is described as non-combustible, moisture repellent, and automatically providing efficient thermal insulation. As a result of its insulating qualities, both summer cooling and winter heating costs are said to be greatly reduced.

According to the manufacturer, the system can be easily installed in old or new buildings by a nationwide chain of experienced franchised acoustical contractors. The system can be installed either by suspending the rustproof, non-staining panels from the roof, framing, or truss work by wires or metal straps, or by direct attachment to the existing ceiling. The lightweight panels and blanket can quickly be pushed up or removed from their supports to provide access to utilities.

The aluminum panels are of .024-in. thickness and are available in six or eight ft lengths with 33 $\frac{3}{4}$ -in. width to give net coverage of 32 in. The six-ft panels provide 16 sq ft nominal net coverage and the eight-ft panels 21 $\frac{1}{3}$ sq ft coverage.

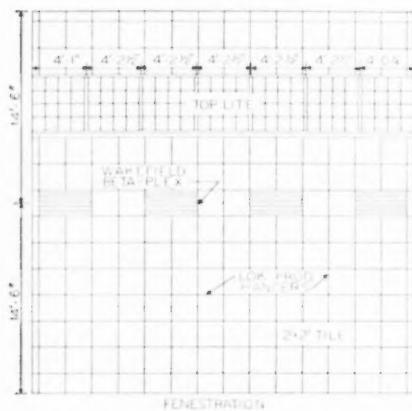
The panels weigh .364 lbs per sq ft. The tee-runners supporting the panels are 2 in. by 2 in. by $\frac{3}{16}$ in. by 12 ft and the angles, which are also made of extruded aluminum, are 2 in. by 2 in. by $\frac{1}{8}$ in. by 12 ft. Both panels and extrusions are available in either natural aluminum or baked enamel white finish. The glass fiber blanket comes in thicknesses varying from $\frac{1}{2}$ in. to 2 in. and can be mounted with various backings to meet specific needs. *Reynolds Metals Co., 2500 S. Third St., Louisville, Ky.*

ROOM AIR CLEANER

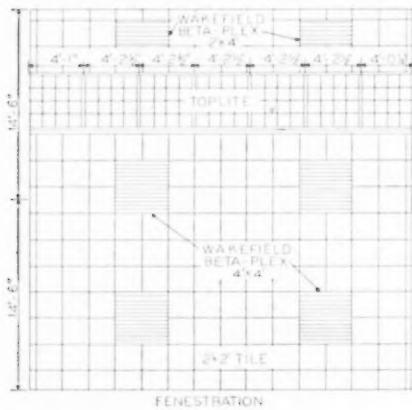
Dustronic, a new electrostatic room air cleaner reportedly can reduce household dusting by a significant amount. The console unit collects airborne dust by drawing the air in a room through a series of treated mechanical and electrostatic filters. Portable in size and lightweight, it can be moved from one room to another without any installation problem. A wall socket is the only connection required. It uses about as much

(Continued on page 230)

How to supplement glass block skylighting by using Wakefield Beta-Plex units



For daytime only: four 2' x 4' Beta-Plex recessed units are mounted on the ceiling almost in the center of the room. The arrangement of side wall and glass block skylighting shown here will put the low point of daylight directly under the Beta-Plex units.



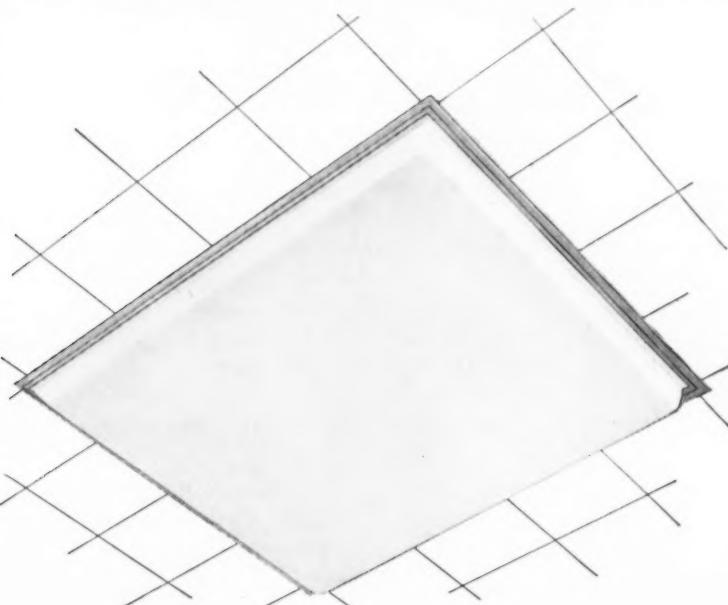
For Day and Night Use: a minimum of 30 ft-C of electric light to meet the requirements of American Standard Practice will be provided by this arrangement of two 2' x 4' and four 4' x 4' Beta-Plex units. Separate circuits and switches will permit full (night) or partial (day) use.

Beta-Plex is one of a series of Wakefield Geometrics. Others are Omega-Plex, Theta-Plex and Sigma-Plex. Folders describing each are available.

Wakefield Beta-Plex is a complete unit ready for recess mounting in a suspended ceiling. Separate circuits and switches may be installed for different lighting levels. The ballasts and lamp-holders are contained in an individual metal housing that provides for hook-on suspension points for the Wakefield Rigid-Arch Diffuser.

The Rigid-Arch Diffuser is molded with a sweeping arch, slightly higher in the center than at the edges to give greatly improved rigidity. It has a non-specular, matt finish that minimizes possible reflected glare from outside the building. Beta-Plex is also available with louvers. The Touch-Latch makes the interior of the luminaire readily available; press up with the touch rod—the Touch-Latch releases and the Rigid-Arch Diffuser swings down and open. Press the diffuser up again—the Touch-Latch secures the panel in place. Available in 2' x 2', 2' x 4', 1' x 4' and 4' x 4' units.

For an illustrated, descriptive 8-page folder on Beta-Plex, write to The F. W. Wakefield Brass Company, Vermilion, Ohio. In Canada: Wakefield Lighting Limited, London, Ontario.



Wakefield Over-ALL Lighting



WAKEFIELD GEOMETRICS



THE CAVALIER



THE GRENAIDER



THE PACEMAKER



THE COMMODORE



THE STAR



There's a new concept in Detroit housing...it's the

Midwest Contemporary

BY EDWARD ROSE



"And we install

GLIDE-ALL Sliding Doors

in every one we build," says Sheldon Rose

"In our MIDWEST CONTEMPORARY homes, we incorporate only those modern features that are functional as well as beautiful," says Mr. Sheldon Rose, V. P. of the Edward Rose Bldg. Co. "Studio ceilings and GLIDE-ALL Sliding Doors are two cases in point. We find these modern, adaptable doors easiest to install. They save us time and construction costs and provide tenants with more usable and accessible closet space." Isn't it time you, too, took advantage of the time and money saving features of GLIDE-ALL Sliding Doors?

Features that make GLIDE-ALL Sliding Doors a better value

- choice of Overhead or Bottom Roller Types
- choice of 8' Floor-to-Ceiling or 6'8" Standard heights
- choice of Modern Flush or Recessed Panels
- panels may be painted, papered or waxed in natural finish

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GLIDE-ALL Sliding Doors

are a product of

WOODALL INDUSTRIES INC.

DETROIT 34, MICHIGAN

A-E PRODUCTS

(Continued from page 226)

power as a 100 w bulb. In addition to its use as a dust-catcher, this air cleaner reportedly offers relief to hay fever and asthma victims by collecting airborne pollen and irritating dust particles. It is also said to be an effective room purifier, since it will filter out all fluids or aerosol produced by sneezing. A fungicidal and germicidal solution destroys germs and bacteria after they are caught on the filter plates. The unit can be built into hot air furnaces, helping to keep the whole house dust-free. Radex Corp., 2076 Elston Ave., Chicago 14, Ill.

NEW FURNITURE LINE

A new room divider has recently been added to the Birchcraft Casual Modern collection. Incorporating a top section with sliding glass panels which is designed to fit on the Birchcraft Server Base, the new piece is simple in design. Another new Birchcraft item is a writing desk, available with either wood or plastic top, and a drop-leaf gateleg table.

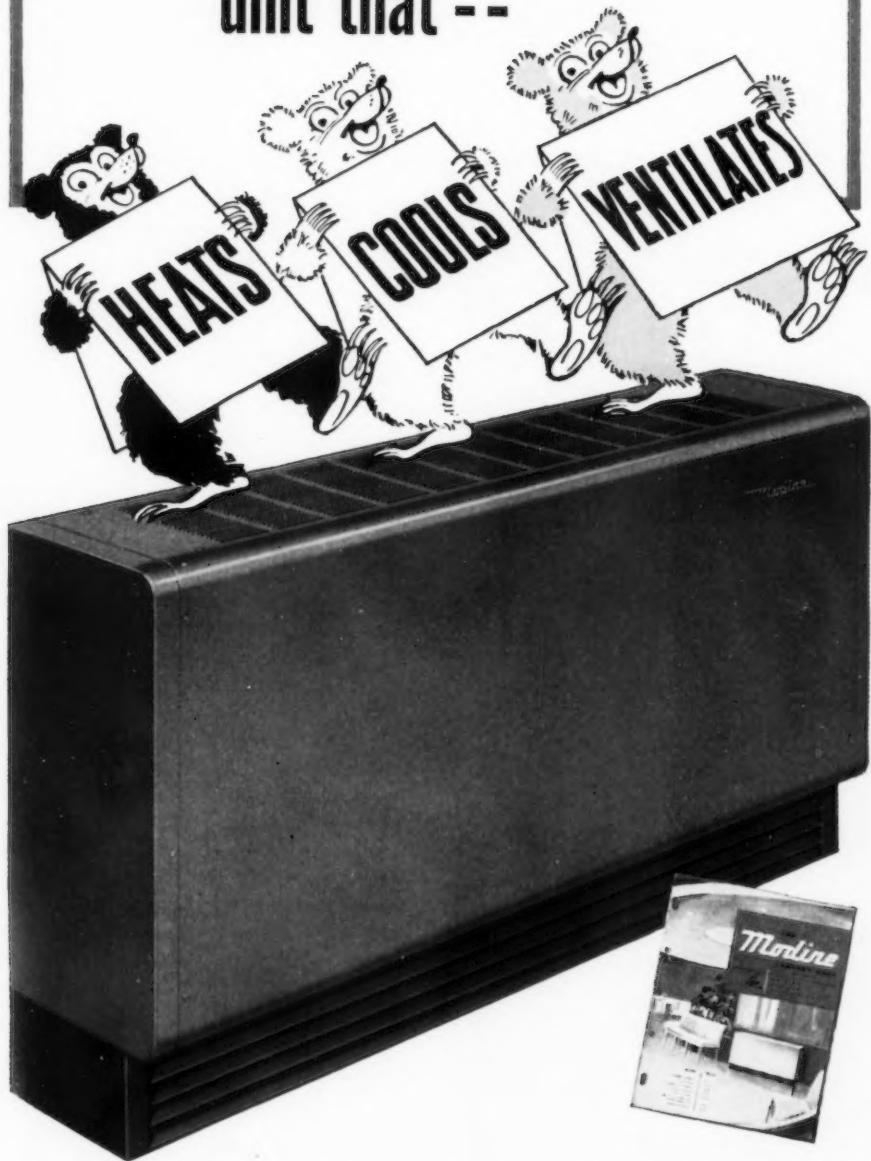
Among upholstered pieces in the line are three different groups—all featuring tight seat construction and a clean, tailored appearance. Included in these groups are sofas, sectionals and club chairs, upholstered in either tweed or boucle. T. Baumritter Co., Inc., 171 Madison Ave., New York, N. Y.

FLUORESCENT ISLAND LIGHT

A horizontal fluorescent fixture designed for low cost change-over to wide range, high-intensity pump island lighting is available from Guardian. Known as Model 470, the new "T" light is engineered to furnish greater illumination on both sides of the island through a light source 15 deg from horizontal. The fixture is equipped with instant start ballasts and instant start lamps. Over-all dimensions are: 49½ in. long, 24 in. wide and 6 in. high. The fixture has a built-in leveling device, and five ½ in. knockouts in the top for easy spot or flood lampholder mounting. A simple latching arrangement permits opening of the glass frames for cleaning or relamping. The unit can be mounted on poles, standards or bracket arms, or can be suspended under canopies. Guardian Light Co., 301 Lake St., Oak Park, Ill.

(Continued on page 234)

Here's a single, economical unit that --



Yes, Modine Cabinet Unit gives you ALL 3

FOR year 'round comfort in large public rooms, nothing can match the economy and performance of Modine Cabinet Units.

With a single unit you get quick, positive, quiet distribution of heated or cooled air. Inexpensive accessories permit introduction, filtering, heating and distribution of fresh, outside air for ventilation.

And low cost is just one outstanding feature of Modine Cabinet Units. Their quiet beauty harmonizes with any interior.

No need for bulky, old-fashioned heating equipment — one cabinet usually replaces two or three cast iron radiators. Recessed in walls or concealed behind a partition or false ceiling, they make difficult remodeling jobs easy.

You can choose from five different models — some for heating plus cooling with chilled water... others for heating with steam or hot water only. Ask the Modine representative listed in your classified phone book for Bulletin 552. Or write Modine Manufacturing Company, 1510 DeKoven Avenue, Racine, Wisconsin.

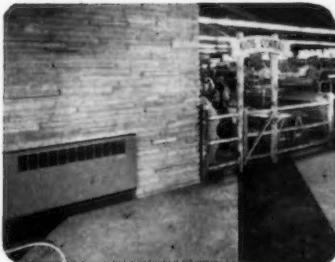
Modine
CABINET UNITS

C-1212

Here are three of many new construction or modernization possibilities



OFFICES. Year 'round comfort at lowest possible cost is provided this large office by economical Type BT Modine Cabinet Units.



STORES. Handsome as a convector but with four to five times the capacity, Type BF Cabinet Unit heats modern store uniformly.



LOBBIES. Wintry blasts from opening doors are no problem in this apartment. Type FF cabinet effectively warms lobby.

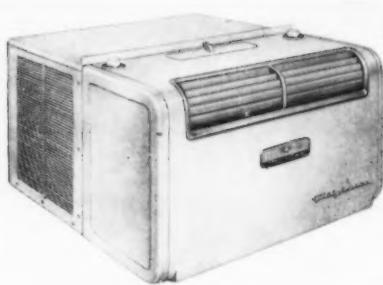


PRODUCTS

(Continued from page 230)

ROOM AIR CONDITIONERS

Climaxing 25 years of producing room air conditioners, the Frigidaire Division, General Motors Corporation has announced a line of 1954 "Silver Anniversary" models. The new anniversary models feature new "Coca-Rio Beige" color styling with gold and chrome trim. "Twin" models will be available



One of new room air conditioner models in 25th anniversary line

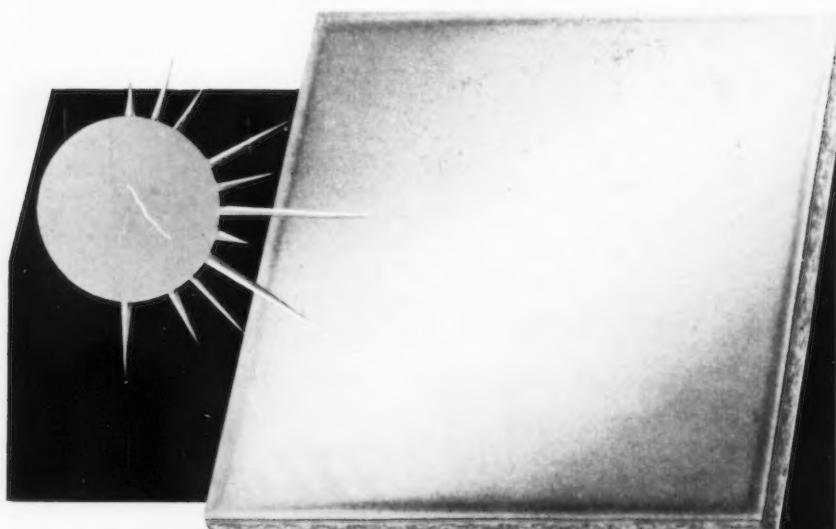
with supplementary "High-Flow" heating, and all will have optional thermostat control for fully automatic operation.

Two series of models are offered—the "Twin," consisting of $\frac{3}{4}$ and 1 hp units, and the "Super," with $\frac{1}{3}$ and $\frac{1}{2}$ hp units. The Twin series models each have two complete refrigeration systems, with rotary-type "Meter-Miser" compressors sealed for lifetime operation and backed by a 5-year warranty. This design is said to give the effect of two air conditioners in one and to be more economical and flexible, since one or both of the systems can be operated at the user's discretion, depending upon outside weather conditions. One of the refrigerating units reportedly supplies adequate capacity, without overcooling on moderate days and nights, at half the operating cost. However, during extremely hot days, both can be operated together to handle the increased load. Return air is brought into the unit along the bottom front edge of the cabinet just ahead of the full-length air filter. Fresh outside air may be pulled into the room by means of a conveniently located damper control. Opposite this control is a master switch, which is used to operate the cooling systems and fan. The fan can be operated alone if desired. Smoke and stale air can be exhausted from the room by opening a small panel on top of the cabinet. The "Super" series models are similar in appearance, design and operation except they are not as wide, because they each have one "Meter-Miser" refrigeration system. The Super series units are available for 115 v operation only. The Twin units are available for 115, 208, and 230 v service. Frigidaire Division, G.M.C., Dayton 1, Ohio.

ROMANY TILES

ARE REAL TILES

Won't Fade!



Due to specially developed ROMANY Opaque Glazes, every one of the many attractive ROMANY colors is fade proof and will not be affected by light or weather conditions. This includes color tones usually susceptible to strong sunlight, as well as all the special shades exclusive with ROMANY — the Real Clay Tile.

Every Architect should have our Sample Tile Chart No. 6. It's free.

UNITED STATES QUARRY TILE CO

Member: Tile Council of America and Producers' Council, Inc.

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OFFICE COPYING MACHINE

A small, low-priced office copying machine, the Ozalid Bambino, has recently been designed to help save time and money for small volume users. Slightly larger than the ordinary electric typewriter, the machine reportedly will copy letters, accounting statements and reports, purchase orders, bills of materials, etc. Up to 200 copies can be made in an hour, and copies can be made from anything written, typed printed or drawn on a sheet of translucent paper up to 9-in. wide in any length. Ozalid Div., General Aniline & Film Corp., Johnson City, N. Y.

(Continued on page 238)

Another important Duriron installation

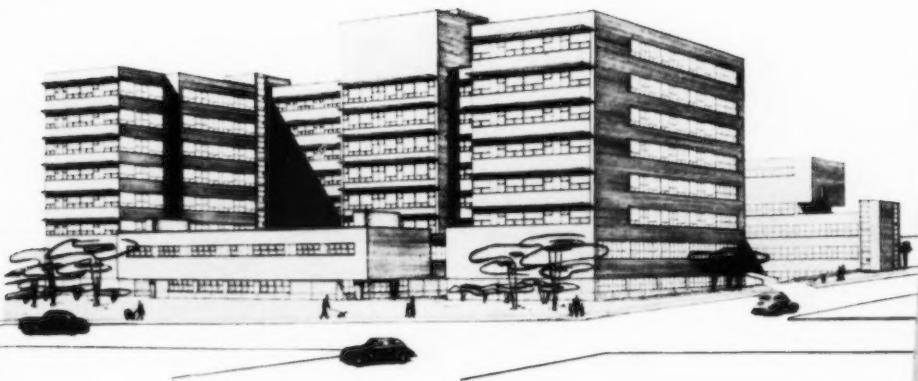
STATE ARCHITECT:
C. J. White

ASSOCIATE ARCHITECT &
HOSPITAL CONSULTANT:
Isadore Rosenfield

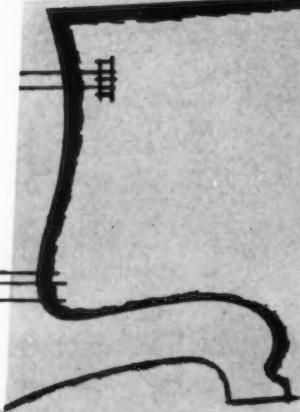
GENERAL CONTRACTOR:
W. A. Berbusse, Jr., Inc.
New York

PLUMBING CONTRACTOR:
Carl C. Grimm

ENGINEER:
N.Y.S. Dept. Public
Works Engineers



at Buffalo, New York
Roswell Park
Memorial Institute



The above architect's sketch shows the Roswell Park Memorial Institute, now under construction at Buffalo, for research and treatment of cancer and malignant diseases. Again, as in so many similar projects, *Duriron is being installed to handle drainage of corrosive liquids.*

Duriron is a high silicon iron alloy which resists corrosion, abrasion and erosion throughout the thickness of the pipe wall, providing "out-of-sight, out of mind" permanence for less building maintenance. Installed, of course, by regular plumbing methods.

Let us send you a copy of Bulletin PF/4 which gives complete details and standard fittings.

DURIRON

LOOK FOR THE NAME ON EVERY PIECE

DURIRON ACIDPROOF DRAIN PIPE

THE DURIRON COMPANY, Inc., 405 North Findlay Street, Dayton 1, Ohio

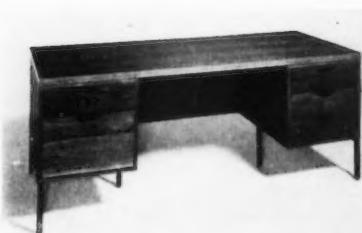


PRODUCTS

(Continued from page 234)

MODULAR OFFICE FURNITURE

Gerald Luss, interior designer and space planner, has recently designed some versatile modular office furniture for Lehigh Furniture Corp. The stock components include ten top sizes, four desk pedestals and 27 varieties of cabinets, which may be arranged in a number of ways to suit the varying needs of



▲ Executive's Desk



▲ Secretary's Desk

Above, two units in a complete new line of modular office furniture

A SPACE SAVING SOLUTION

for "door swing" problem areas

The new Amweld Slide-Away is an attractive steel flush door when closed — yet it completely disappears by gliding into a hidden wall pocket — out of sight — out of the way. Operation is smooth and silent with no obstruction to room or hall space. It is the most practical answer for floor plans where "swing" space may not be conveniently available.

EASY-TO-INSTALL — Designed for use with standard Amweld Steel Flush Doors — it can be installed without mortising or drilling. The Slide-Away Frame Unit is also available separately for use with wood doors. Complete step-by-step instructions furnished in every carton. Factory primed with grey baked-on enamel, Amweld Flush Doors are ready for your choice of colors.

FITS STANDARD DOOR OPENING

The Slide-Away Unit is furnished for 2'6" and 2'8" (1½" thick, 6'8" high) Amweld Flush Doors. Pocket frame fits into conventional 2" x 4" wall construction and wood core frame permits nailing of lath.

FINGER PULLS OR LATCH SETS

Handsome brass recessed finger pulls are furnished where Slide-Away is used for ordinary doorways. Latch sets available for privacy in bathroom or bedrooms.



SEE YOUR AUTHORIZED AMWELD DEALER
He will be glad to discuss your door problems with you and show how the Amweld Slide-Away as well as Amweld Steel Doors, Frames and Sliding Closet Door Units can save you money. Contact him today.

AMWELD BUILDING PRODUCTS DIVISION

THE AMERICAN WELDING & MANUFACTURING CO.
340 DIETZ ROAD • • • WARREN, OHIO

office personnel — from typist to top executive. Desk tops range in size from 30 by 48-in. to 36 by 96-in. in stock sizes increasing in length in 6-in. multiples. Desk tops and pedestals are finished in laminated plastic with walnut and birch matched grains; legs and hardware are of steel, finished in triple-baked black lacquer. The drawers have stock partitions to provide storage for stationery, office utensils, hanging files of various sizes and cubicle files for 3 by 5-in. file cards. Matching cabinets, which may be mounted on legs or hung on special wall brackets, are provided with adjustable shelves, vertical dividers, hinged or sliding doors. They are available in two depths, 14 in. and 18 in. and three widths, 30, 42 and 19 in. *Lehigh Furniture Corp., 16 E. 53rd St., New York, N. Y.*

WATER SOFTENER AND CONDITIONER

The "Permitit" *Electro-Matic*, a new and completely automatic water softener and conditioner for the home, has recently been marketed. The unit softens incoming water supply by removing calcium and magnesium solids, clears the water of turbidity or silt and removes normal amounts of iron and manganese. To be known as Model EMD, it rounds out the manufacturer's line of water conditioning equipment. More efficient performance is claimed for treatment of certain types of raw water supplies, due to the new model's system of filtering the supply down through its high-capacity ion exchange resins. The one-piece unit embodies a simplified valve assembly which contains a bypass to allow for the passage of water during regeneration periods, and is said to reduce soap consumption by as much as 80 per cent.

The unit is manufactured in two sizes, and either model can be tucked away

(Continued on page 242)



Rx for hospital floors

TERRAZZO

Architect's prescription for good looks and long life

Floors and corridors in the Medical and Surgical Building of the Pennsylvania State Hospital are due for years of heavy foot traffic, rolling equipment and constant scrubbing with disinfectants. To build in the kind of good looks and long life that will be able to stand up to such a future, the architect prescribed Terrazzo.

Terrazzo floors made with Atlas White answer several important architectural design problems, and offer almost unlimited color and design possibilities. A true white cement like Atlas can produce almost any desired color and shading.

And here's another major consideration. Terrazzo is the most economical long-term choice.

Made with Atlas White Cement, it's tough as concrete, beautiful as marble. Terrazzo washes clean easily—no other care is necessary. That keeps maintenance down and annual cost low.

For safer operating and other anesthetizing rooms Terrazzo floors are made moderately conductive by an acetylene carbon admix. This guards against explosion caused by static electricity.

For further information see SWEET's Catalog, Section 12g/Un and 3d/Un, or write Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

Medical and Surgical Building,
Pennsylvania State Hospital,
Norristown, Pa.
Architect:
Buder, Young and Schultz
General Contractor:
Wark & Co.
Terrazzo Contractor:
Italian Marble Mosaic Co.
all of Philadelphia, Pa.

AR-WCT-80

FOR BEAUTY AND UTILITY

ATLAS WHITE CEMENT

FOR TERRAZZO, PAINT, SLABS, STUCCO

UNITED STATES STEEL HOUR—Televised alternate weeks on ABC Network—Consult your newspaper for date, time and station.



WHEN ROOMS REQUIRE
PRIVACY...FREE FROM

NOISE!



RIVERBANK SOUND INSULATING **DOORS**

HARDWOOD SOLID CORE DOORS

In addition to RIVERBANK Sound Insulating Doors, we specialize in producing solid core flush doors, fire doors, x-ray and shielded doors for all types of public and private buildings. Most important to you — all HARDWOOD Products Corporation Doors are custom made for your job! Consult Sweet's.

Regardless of what other acoustical treatments you may employ to reduce noise transmission, you'll need a RIVERBANK Sound Insulating Door to complete the sound barrier. These scientifically constructed and patented doors isolate noise and prevent its passage from room to room in direct volume relation to the insulating value of the weakest acoustic area. RIVERBANK Doors are made in three laboratory certified decibel ratings to meet the full range of acoustical needs. They reduce transmission loss by 35, 40 and 43 decibels providing as much as 70% more acoustical efficiency than a standard solid core door. Write for complete architectural specification folder on RIVERBANK Sound Insulating Doors — plus special brochure in non-technical language for clientele use. Consult Sweet's File 15C HA



OFFICES IN
NEW YORK
BOSTON
CHICAGO
CLEVELAND

HARDWOOD
PRODUCTS
CORPORATION **DOORS**

A-E PRODUCTS

(Continued from page 238)

into a corner of the kitchen or closet, if cellar space is not available. The brine chamber and softener tank are fabricated from drawn steel with continuous welded seams, and are finished with a high-gloss enamel. The EMD-25, 55 in. high with a 9 in. diameter, and the EMD-50, a 61 in. high and 12 in. diameter unit, yield flow rates of 6 and 10 gal. of softened water per minute, respectively. The Permutit Co., 330 W. 42nd St., New York 36, N. Y.

RADIANT HEAT PANELS

New economy in electric heating is reportedly offered by *Thermoray*, a wall heater which emits radiant heat and also creates a flow of warm air. A permanent unit which can be attached to the wall or recessed into it, the heater can be easily installed in old and new buildings. It is said to have met the challenge of cold weather in many sections of the country where winter is severe and prolonged, and to be gaining acceptance in localities where there is not enough cold weather to justify the expense of an oil, coal or gas heating system.

The new heater delivers full heat quickly and requires a very low percentage of current over the rated capacity in the first few minutes of operation, thus offering great economy in electrical heating. The heater has proved popular in homes and offices because of its cleanliness, comfort and convenience. With each room or zone thermostatically controlled, it is possible to obtain heat to suit individual requirements. Where attics, basements and other areas are to be converted to living spaces or play rooms, the heater offers economical and readily available systems of supplementary heating. The unit is also described as extremely safe. With the heat panel constructed of a special asbestos composition, there is nothing to break or shatter. The heating element is buried inside it. Even though the heat panel is safe to transient contact, a louver keeps prying hands at a distance. The heaters have the approval of Underwriter's Laboratories, Inc. and of the Department of Water Supply, Gas and Electricity of the City of New York. They are available in wattage ratings of 750 and 1250 for operation on 115 or 230 v. and carry a five-year manufacturer's guarantee. *Thermoray Corp.*, 151 East 44th St., New York 17, N. Y.

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ageless mineral
ASBESTOS

... comes the smooth-surfaced built-up roof
FLEXSTONE*
which provides a flexible covering of stone ...

Because they are made of the mineral, asbestos, the felts of a Johns-Manville Flexstone Built-Up Roof assure lasting service and protection. They will not support combustion. They effectively resist the drying out action of the sun . . . won't rot, are weatherproof and need no periodic coating.

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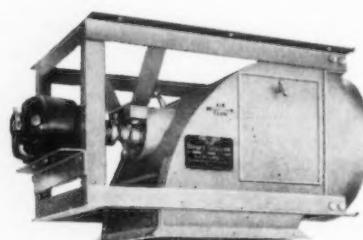
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Now moving to completion after fifty years of building, this magnificent edifice combines the architectural splendor of the past with today's utilitarian advancements. An example is the up-to-the-minute equipment that comfortably heats the spacious interior.

Handling a total load of 70,000 sq. ft. EDR are three H. B. Smith gas fired boilers. Even though a chimney was provided, consulting engineers decided that proper draft and removal of waste gases required a WING Draft Inducer for each boiler. Barometric dampers with relief gates were mounted integrally on each Draft Inducer.

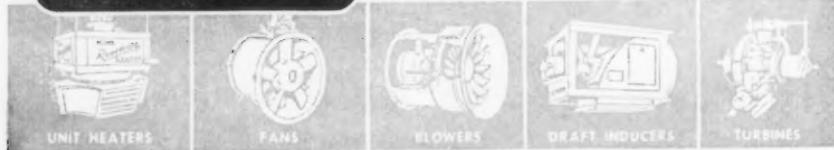
The positive, dependable draft, in just the right volume, created by WING Draft Inducers assures efficient combustion at all times despite weather conditions, and without the need for tall stacks. Write for a copy of Bulletin I-52.



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A.E.I. LITERATURE

(Continued from page 174)

SOAP DISPENSERS

Watrous Liquid and Lather Soap Dispensers, Catalog No. 471. Includes complete information on the manufacturer's liquid and lather soap dispensers, soap tanks and fittings. Dispensers and valves shown include both wall mounted and lavatory mounted types, for exposed or concealed installations. A number of special soap dispensers for hospital use are shown. Complete dimensional data is provided on each dispenser and valve. 16 pp., illus. *Imperial Brass Mfg. Co.*, 1200 W. Harrison St., Chicago 7, Ill.

REINFORCED LIGHTWEIGHT AGGREGATE CONCRETES

Design Data for Some Reinforced Lightweight Aggregate Concretes. This study, prepared by the National Bureau of Standards under the sponsorship of the Housing and Home Finance Agency, is based on one of a series of investigations aimed at improving the quality and economy of construction utilizing lightweight aggregate concretes. Aggregates investigated include expanded shale, pumice and expanded slag. For each mix, complete information is provided on the materials used and their preparation and proportioning. Strength tests are fully described and data is provided on compressive, flexural, shearing and bond strengths, modulus of elasticity, and shrinkage and thermal conductivity. 19 pp., illus. 15 cents. *Housing and Home Finance Agency, Office of the Administrator, Div. of Housing Research, Washington 25, D. C.*

WATER SYSTEMS MANUAL

Manual on Water Supply and Equipment, 1953 edition. Completely new and revised edition of manual, the first since 1946, serves as a source of information regarding all phases of the installation, operation and servicing of electric water systems for the farm or beyond reach of municipal water mains. An authoritative reference prepared and edited by leading water supply engineers, the manual contains latest data on water requirements for modern appliances, and covers newest technical developments, including the submersible pump. Price is \$1.50 per copy. 80 pp., illus. *National Assoc. of Domestic and Farm Pump Manufacturers*, 39 S. La Salle St., Chicago 3, Ill.

AUTH'S "whisper-control" Nurses' Call System— a brilliant new aid to **HOSPITAL EFFICIENCY**



Yes, they're both happier—and with good reason. The patient has the psychological advantage of knowing that her smallest need will get immediate attention. She knows she will be heard when she wants to be heard even if she whispers, no matter in what direction she faces. So long as she can move her thumb and make a sound, she's sure of attention. Knowing this, she is less demanding, more relaxed.

And the Nurse? Well, she's actually been multiplied several times. Her energy and time are conserved, her spirits improved, her efficiency immeasurably increased. And so is the efficiency of the whole hospital. For that's the wonder of the new AUTH Vokalcall. It's the finest single aid to hospital efficiency that was ever devised.



Nurses' control available in two styles: With speaker-microphone and telephone handset for auxiliary use . . . or with telephone handset only.

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says the patient!*

*"Like having one private patient"
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In addition to Vokalcall Systems for hospitals Auth also produces standard visual nurses' call systems, doctors' paging and in-and-out systems, clock systems and operating room timers, intercom telephone and fire alarm systems, and night lights.

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**FOREMOST IN THE DESIGN AND MANUFACTURE OF ELECTRICAL
SIGNALING, COMMUNICATION AND PROTECTIVE EQUIPMENT**

THE RECORD REPORTS

WASHINGTON (Cont. from p. 38)

a strong stand on VA and FHA interest rates, urging that a modification of past policy be included in the committee recommendations to the President. It expressed hope that "means will be devised for keeping the FHA and VA interest rates at all times in a favorably competitive relationship to the rates being paid on other types of investment."

The committee also concerned itself with an adjustment to lessen the need

for public housing as such, and to increase the aids extended through FHA to make more assistance available for private industry in the construction of low-cost housing for low-income tenant occupancy. Tied in with this was the increased attention to the trade-in programs, rehabilitation and conservation, on which FHA was planning to ask Congress for more liberal loan insurance terms.

NEW RULING FAVORS BROADER PHA ACTION

The Public Housing Administration now can proceed with its plans for advancing funds for planning, site acquisition and other costs of development on public housing projects where authorization to begin construction has not yet been granted.

The way was cleared in a recent ruling from the office of the Comptroller General of the United States.

PHA will, of course, limit the number of new public housing units started this fiscal period to the 20,000 ceiling clamped on by the last Congress. The agency has been up in the air, however, concerning its course of action regarding those units in excess of this number that are already under annual contributions contracts.

Seeking an opinion from the Comptroller General, the agency was told that office "would not feel required to object" if its plans for advancing funds on these additional units were carried out.

"INTEMPERATE" CRITICS REPROACHED BY SLUSSEN

Charles E. Slusser, Commissioner of the Public Housing Administration, has bared some of the headaches he is experiencing in his new position. At the same time he displays an enthusiasm for his job rare among Washington officials.

Of course Mr. Slusser's toughest task, coming soon after he assumed office, was the parcelling out of the 20,000 low-rent public housing units authorized by Congress among communities that had applied for 55,946. It wasn't easy to spread these 20,000 homes among the several hundred housing authorities throughout the nation, he admits.

PHA was ready for some criticism after it announced the decisions. But it also hoped for a greater degree of understanding on the part of housing authorities, city officials and friends of the public housing movement than it found in the weeks following the ration announcement.

Mr. Slusser said he was surprised at the intemperate tone of much of the criticism leveled against the agency after the allocations were made.

"Admittedly, 20,000 units could not and did not satisfy the country's needs," he added, "but it was all that Congress authorized for the year. We must not lose sight of the fact that low-rent public

(Continued on page 254)

"Apparently he didn't specify FARLITE plastic laminates!"

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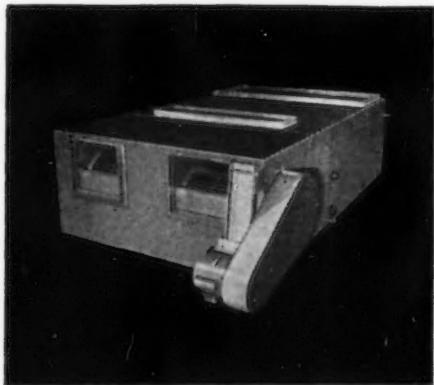
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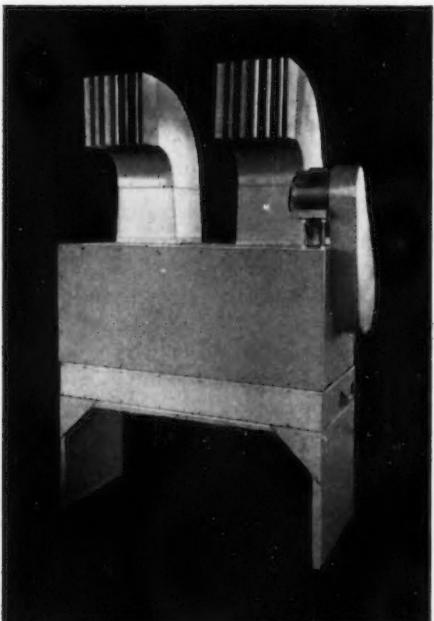
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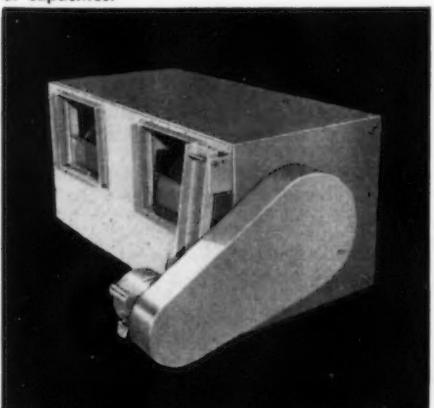
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HERMAN NELSON TYPE "B" HEATING AND VENTILATING UNIT. This new model features: low outlet velocities—slow fan speeds—a wide selection of heating coils—available with humidifier—and is ideal for institutional and commercial uses.



HERMAN NELSON TYPE "M" CENTRIFUGAL FAN UNIT HEATER. For industrial applications this brand new unit features—high cfm capacities—high heat output—effective air distribution obtained by moderate outlet velocities combined with specially designed nozzles and deflectors. Standard and heavy duty heating coils available in a wide range of capacities.



HERMAN NELSON TYPE "Y" VENTILATING UNIT. This new model features one, two or three fans on a common shaft and housed in compact cabinet for straight-line air movement. Especially useful for booster work in ducts—for untempered air supply or exhaust.

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389 Central Avenue, Louisville 8, Kentucky
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THE RECORD REPORTS

WASHINGTON (Cont. from p. 250)

housing is something for the people. If the people want more public housing, they will tell Congress and Congress will provide it."

PHA is urging local communities to find ways locally to augment the Federal aid given them. Cities are being told to assert themselves to the extent permitted by local and state laws.

As for his attitude toward his job, the Commissioner said in a recent speech

before the National Association of Housing Officials:

"Bob Taft did not recommend me for the position of Public Housing Commissioner, and President Eisenhower did not so appoint me for the purpose of liquidating the public housing program. Bob Taft saved the public housing program in 1949. President Eisenhower has that same goal today. Their conception of the program is that of the original mold in

which the program was cast. Let us return to that concept. To me that concept is simply: Decent homes for those who do not have them and cannot afford them."

MORE RESEARCH NEEDED, STANDARDS REPORT SAYS

The searchlight of outside scientific opinion was turned on the National Bureau of Standards this year and in the Division of Building Technology the result may be greater emphasis on research.

A nine-man evaluating committee appointed in April from scientific and technical societies which Secretary Weeks had asked to designate representatives have now issued their report.

Broad findings on building technology were as follows:

1. The Division is responding with reasonable satisfaction to the needs of the building industry.

2. Nevertheless, an infusion of new blood will benefit the programs undertaken.

3. A review of the activities to accelerate research and minimize service testing is desirable.

4. The creation of an advisory committee can materially contribute to the administrative and program determinations of this area.

A relative handful of experienced and recognized persons are now carrying on the Division, the report pointed out. These men were said to lack competent understudies. And little is being done to obtain and train understudies, the scientists found. As a result, they said, the quality and reputation of the Division will suffer as the present key personnel is reduced through retirement.

In the field of research the investigators found that much of its work the Division considers to be research actually approaches the area of testing. It was observed that the "glaring needs" of the building and construction industry for research data will not be adequately served unless the Division devotes less of its time to service testing — testing which might be carried out equally well through other methods.

This observation from the Committee's report was an especially interesting one:

"Many of the techniques and practices in this industry have not had the benefit of technical innovation to the degree common to our major manufac-

(Continued on page 256)

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Phonacall is designed especially for hospital service—and each system is individually planned to best serve the hospital where it is installed. Write for further information.

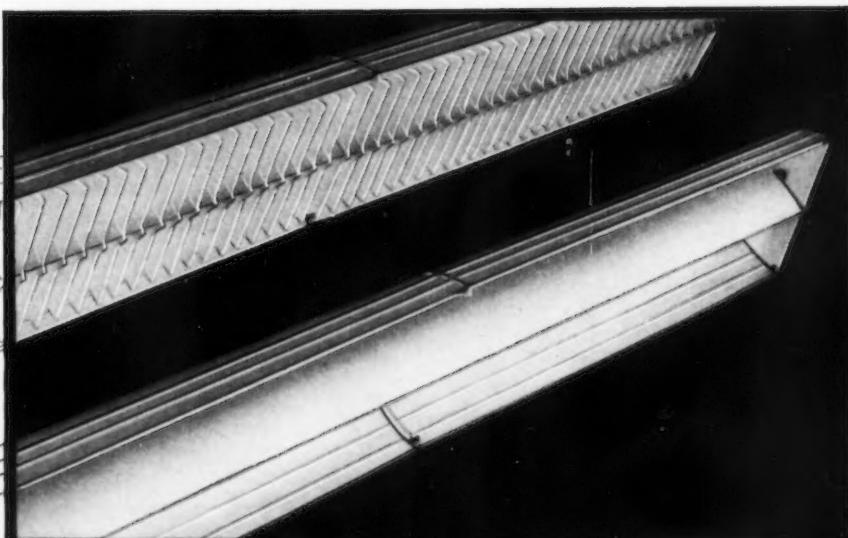
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T-17 Low Brightness Unit—The I-C line has been designed to accommodate the 40-watt 60-inch T-17 low-brightness lamp, meeting the need for a unit with minimum shielding. Combines low brightness, comfortable illumination with high efficiency and easy maintenance.

Now Sylvania comes forward with the new I-C series . . . the most sales-winning lighting fixture line ever offered.

It's another high quality Sylvania line, including today's most wanted features. Amazingly versatile, too, with 4, 5, and 8 foot units specifically designed to meet the lighting needs of offices, stores, schools and factories. Ideal for critical seeing tasks such as those encountered at printing plant composing stones or in the machining of specular metals.

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THE RECORD REPORTS

WASHINGTON (Cont. from p. 254)

turing industries; the work going on in the Building Technology Division must be viewed in the light of this historic situation. If it were compared with the complex procedures and delicate judgments found in some of the other scientific areas, it might be considered as a lower order of endeavor. But measured by the existing demand from and the degree of technical progress of the industry it serves, it is performing reason-

ably well. This opinion is reinforced by the constant demand from industry for the Division's advisory assistance and the tangible savings to government agencies which have followed the Division's guidance in solving their specialized building problems."

Upon receiving the report, Secretary Weeks said he was in full accord with the views of the evaluating committee on the high level importance to the na-

tion of the Bureau of Standards. Furthermore, he said he would do all within his power to aid in the strengthening of the Bureau so that it can fully discharge its responsibilities.

ADDENDA

- Secretary of Commerce Sinclair Weeks made one of numerous recent Administration estimates of the business outlook in a speech before the National Industrial Commerce Board in New York, and he pretty well summed up the Administration attitude when he said: "The economic climate today is good. Of course a fluid economy is never static. Adjustments occur. In going from controls to more free enterprise, the transition itself enhances somewhat the number of minor adjustments. We should not blink our eyes at fluctuations as they take place from time to time. It is realistic to recognize "soft spots." It also is realistic to recognize *all* the facts, including the fact that our overall economy is in sound health and has a strong constitution. It has limitless possibilities for growth. Basing my judgment on the facts, I am a realistic optimist about the future."

- The Atomic Energy Commission has approved another study project looking toward production of electric power for industrial use. Five private firms will conduct the study and make a preliminary economic appraisal of a reactor design. The firms: American Gas and Electric Service Corporation, New York; Bechtel Corporation and Pacific Gas and Electric Company, both San Francisco; Commonwealth Edison Company, Chicago; and Union Electric Company, St. Louis.

Under an agreement announced earlier, Duquesne Light Company, Pittsburgh, and Walter Kidde Nuclear Laboratories Inc., Garden City, L. I., will survey feasibility of design, construction and operation by private industry of power-producing reactors.

- The Federal Civil Defense Administration has completed a study outlining a vast network of underground shelters for the nation's critical industrial targets, according to Administrator Val Peterson. Mr. Peterson said the cost of moving key facilities underground would run from \$12-90 billion dollars — but this was the only alternative to dispersal of industry and evacuation of cities.

(More news on page 258)



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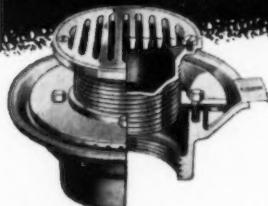
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THE RECORD REPORTS

(Continued from page 256)

ON THE CALENDAR

Dec. 2-4: Mid-Century Conference on Resources for the Future — Shoreham Hotel, Washington, D. C.

Dec. 6-9: 49th Annual Meeting, American Society of Refrigerating Engineers — Washington, D. C.

Dec. 9 *indefinitely*: Exhibition, 19th

Century American Rooms — Brooklyn Museum, Eastern Parkway, Brooklyn.

Dec. 10: Commerce as a Patron of the Arts; third in a series of forums on "The Impact of Science and Materialism on the Arts Today" — Architectural League of New York, 115 E. 40th St., New York City.

Jan. 7-9: The Metropolis in Modern Life: a Bicentennial Conference — Columbia University, New York City.

Jan. 12-14: Annual meeting, National Constructors Association — Hotel Commodore, New York City.

Jan. 14: Technical Development and Its Impact on Architectural Esthetics, fourth in a series of forums on "The Impact of Science and Materialism on the Arts Today" — Architectural League of New York, 115 E. 40th St., New York City.

Jan. 17-21: Tenth Annual Convention, National Association of Home Builders — Conrad Hilton and Sherman Hotels, Chicago.

Jan. 18-22: Winter general meeting, American Institute of Electrical Engineers — New York City.

Jan. 24-27: Annual convention and show, Mason Contractors Association of America — Sherman Hotel, Chicago.

Jan. 25-27: Annual Meeting, American Society of Heating and Ventilating Engineers — Houston, Tex.

Jan. 25-28: Plant Maintenance and Engineering Show and Conference, produced by Clapp & Poliak Inc. — International Amphitheatre and Hotel Conrad Hilton, Chicago.

Jan. 27-29: Tenth Annual Technical Conference, Society of Plastics Engineers — Royal York Hotel, Toronto.

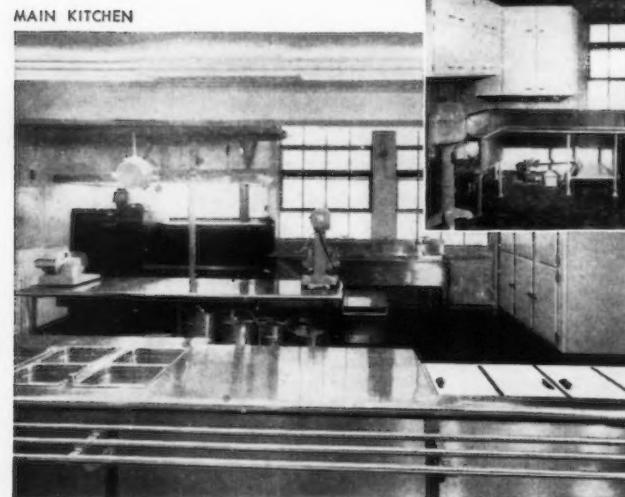
Jan. 28-29: Canadian Conference on Prestressed Concrete — Hart House Theatre, Toronto, Ont.

Feb. 3-5: Ninth Annual Society of the Plastics Industry Reinforced Plastics Division Conference — Edgewater Beach Hotel, Chicago.

Feb. 11: Technical Development and Its Impact on Painting; fifth in a series of forums on "The Impact of Science and Materialism on the Arts Today" — Architectural League of New York, 115 E. 40th St., New York City.

Feb. 11-13: 1954 Convention, National School Boards Association — Chalfonte-Haddon Hall, Atlantic City.

Feb. 13-18: American Association of School Administrators, National Education Association — Atlantic City, N. J.



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OFFICE NOTES

Offices Opened

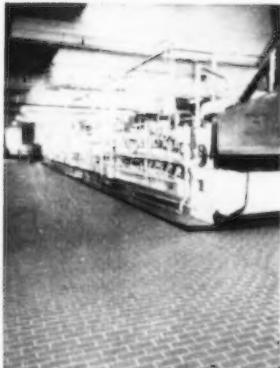
• Rufus D. Lewis Jr., Architect, has announced the opening of his office at 349-B W. Evans St. (P. O. Box 811), Florence, S. C.

• Millard F. Whiteside, A.I.A., announces the opening of an office for the

(Continued on page 260)

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THE RECORD REPORTS

(Continued from page 258)

practice of architecture at 334 Mamaroneck Ave., White Plains, N. Y.

• Ward Beaumont Whitwam has opened an office for the practice of architecture at 220-21 Kresge Building, Sioux Falls, S. D.

New Firms, Firm Changes

• Wm. Glenn Balch, Louis L. Bryan, John Loring Perkins and W. K. Hutcha-

son have formed a partnership for the practice of architecture. The firm will be known as Balch, Bryan, Perkins, Hutchason and offices will be located at 2933 Rowena Ave., Los Angeles 39, Calif.

• The firm of Lance, McGuire & Muri, Architects, was dissolved on Jan. 1, 1953. McGuire & Muri have opened offices at 231 Broadway, Tacoma, Wash.

• On November 1 Henry B. Trautwein and Dan D. Milosevich established a partnership to be known as Milosevich and Trautwein, Architects. The firm's offices will be at 3391 N. High St., Columbus 2, Ohio.

• The firm of Thulin & Woods, Consulting Engineers and Architects, have opened offices at 105 S. LaSalle St., Chicago 3, Ill. Firm members include Frederick A. Thulin Jr., Engineer, Kenneth R. Woods, Engineer, and Frederic M. Isensee, Architect and Engineer.

• Robert Law Weed, A.I.A., has announced that the firm of Robert Law Weed and Associates will be known from now on as Weed, Russell, Johnson Associates. Offices will remain at 550 Brickell Ave., Miami, Fla.

New Addresses

Talmage O. Parker, A.I.A., Foley, Ala.

Servos and Cauley, Architects, 102 Eglinson Ave. East, Toronto, Ont.



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ALABAMA FRESHMEN HEAR INDOCTRINATION SERIES

Freshman architectural students at Alabama Polytechnic Institute will, the school hopes, benefit from early exposure to the practitioner's view of the responsibilities, ethics and scope of the profession by a series of indoctrination lectures which the Institute initiated this year. Among the lecturers this fall were Lawrence S. Whitten, president of the Alabama Chapter, American Institute of Architects, Birmingham, who addressed the students on "Architecture as a Profession"; Samuel Inman Cooper, F.A.I.A., Atlanta, Ga., who spoke on "Ethics and Responsibility of the Architect"; Benjamin Baldwin, architect and interior designer, Montgomery, who spoke on "Interiors and Architecture"; and Robert F. Howard, Director of the Birmingham Museum of Art, whose subject was "The Relationship of Architecture and the Other Arts." Other lectures were delivered by members of the teaching staff.

The Institute has also announced the appointment of Chester H. Jordan, A.I.A., to the staff. Mr. Jordan's title will be Assistant Professor of Architecture.

(More news on page 262)

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THE RECORD REPORTS

(Continued from page 262)

CINCINNATI STORE PLANS SHOPPING CENTER BRANCH

The major store in Cincinnati's projected \$12 million Woodner regional shopping center will be a branch of Rollman & Sons Company, Cincinnati department store of Allied Stores Corporation. In addition to Rollman's, the center will have 54 other stores on the



In its position at the southern end of the mall Rollman and Sons branch store will be the "main draw" in the projected Woodner shopping center, soon to be built near Cincinnati

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41-acre site, as well as such services as a post office and a playground and nursery.

The three-story department store will occupy a position at the south end of a mall which will run through the center of the building, and will contain 125,000 sq ft of store space, with provisions for expansion in the future. The entire shopping center building will have an area of 625,000 sq ft, and the parking area will cover 1,150,000 sq ft, space enough to handle an estimated 12,000 cars daily.

Plans for the Woodner Center were developed with the advice of the Urban Land Institute's Community Builders' Council, a group of 25 builders, architects, realtors, investors and insurance men which serves to pool information and experience in the shopping center field.

Architects for the project are the New York firm of Ketchum, Giná and Sharp.

(More news on page 266)

Apartment buildings on the right are part of the Swifton Village development; Reading Road, which is shown on the left, is the main thoroughfare between Dayton and Cincinnati





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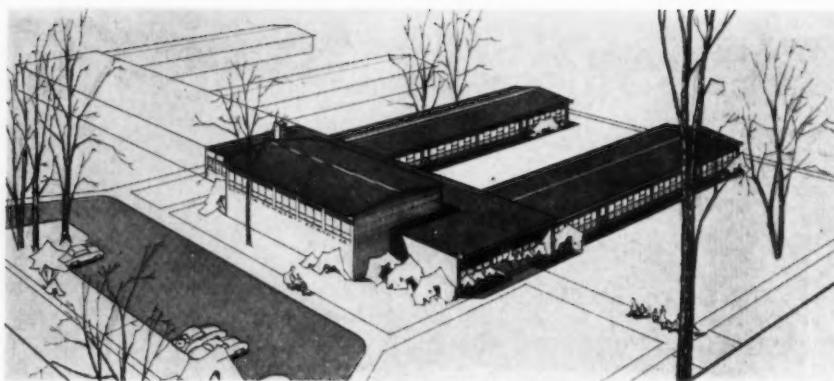
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THE RECORD REPORTS

(Continued from page 264)

"CORRIDORLESS CLASSROOMS"

Perspective view of Livonia, Mich., Elementary School—the two constructed classroom wings to the right and contemplated future expansion indicated in the background. Large multi-purpose room (left) serves for sports, auditorium and cafeteria purposes; adjoining is kitchen with complete food preparation facilities. Also provided are offices, teachers' rooms, boys' and girls' locker and shower rooms, a library, a book storage room and a clinic.



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Pittsburgh Plate Glass Company has construction under way on a new building to house its basic paint research program. Hoffman and Crumpton of Pittsburgh are the architects; preliminary design was by specialists of the Pittsburgh paint division.

The three-story building will be of reinforced concrete construction with brick facing, and has been designed to harmonize with the company's adjacent paint manufacturing plant. Facilities will include a library and lecture room in addition to approximately 68,000 sq ft of laboratory space. Basement space will be utilized for housing mechanical equipment and for storage. The building will be completely air conditioned.

The laboratory will be staffed by about 60 people, many of them highly skilled technicians to be transferred from Pittsburgh's present research laboratories in Milwaukee. The technical group will be augmented by local labor.

(More news on page 270)

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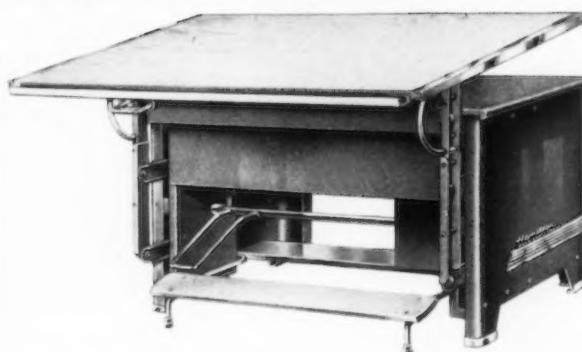
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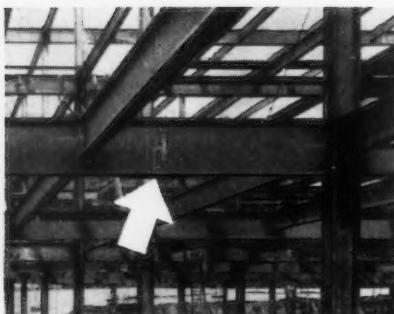


Fig. 1. Welded detail on multi-story 1700-ton framework built with 15% less steel. Structural designers: Paul E. Jeffers and Robert Wilder, Los Angeles, California.

DESIGN IDEA CUTS STEEL COSTS 15%

IN the 1700-ton framework above, continuous girders passing over columns are spliced at points of minimum stress between columns rather than at the columns. The construction, made possible at low cost by arc welding, permits use of smaller size girders, thus cutting steel requirements 15%.

The example shown is typical of how cost-minded architects and structural engineers are utilizing ultimate benefits of welded designs to lower construction costs. Through continuous framing, by eliminating splice plates, and taking advantage of low-cost shop fabricating methods, structural savings of 15% to 20% over riveting are common achievements. Furthermore, welded buildings provide more useable space because less height is required per story and greater floor area results from smaller beam and column sizes.

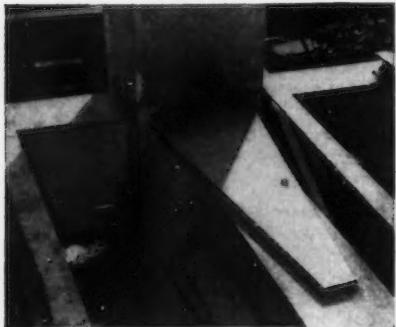


Fig. 2. Beam to column connection on 11-story apartment, 1200-ton frame erected with 25% less steel. Engineers and Contractors: Byrne Organization, Inc., Washington, D. C.

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THE RECORD REPORTS

(Continued from page 266)

WEST VIRGINIA CHAPTER HAS BANKERS TO DINNER

Increasingly cooperative relations between architects and bankers was the keynote at a recent meeting of the West Virginia Chapter of the American Institute of Architects when Charleston bankers were entertained at the chapter's second annual building products display dinner. Chapter members and their guests, including engineers, contractors and exhibitors, heard an address by Marcellus E. Wright Jr., A.I.A. regional director, who warned his listeners to beware of the threat of socialization to the building field, citing as an example the Virginia legislature's attempt to legalize standard plans for schools. He urged architects, builders and lending institutions to continue to work together in resisting this threat.

(More news on page 274)



Seen at the West Virginia meeting, above: Irving Bowman, president, West Virginia chapter; Earl Browder, contractor; Marcellus Wright, A.I.A. regional director; and Elliott Abbott, treasurer, Associated General Contractors. Below: C. E. Silling, past regional director, A.I.A.; W. L. Motley, vice president, National Bank of Commerce; and J. K. Chilton, Bowers & Chilton, Inc., Contractors



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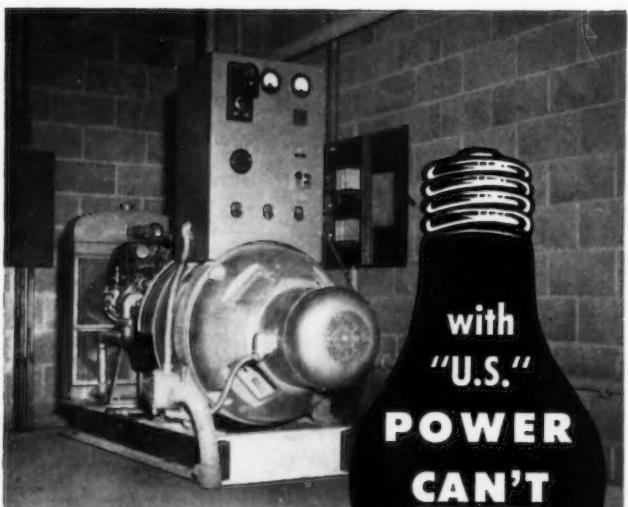
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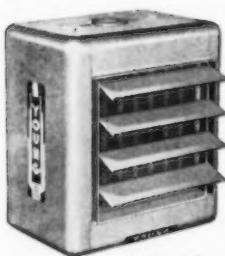
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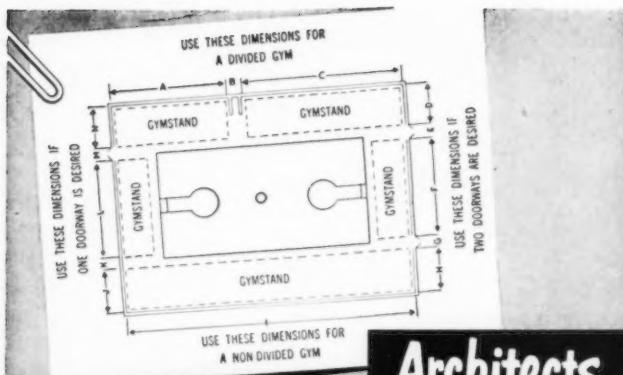
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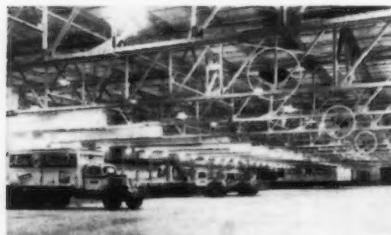


Aerial view of all-new bakery and warehouse of American Stores Company, Philadelphia. Engineers and Architects: Ganteaume & McMullen, Boston. General Contractor: Hughes-Foulkrod Company, Philadelphia. Heating Contractor: W. M. Anderson Company, Philadelphia.

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THE RECORD REPORTS

Jelley

(Continued from page 20)

deed, a "larger" saving when compared to the approximately three per cent saved altogether in the austerity building program decreed for the services by Congress during the Korean emergency.

A second section deals with program planning. Admiral Jelley stressed that this would be staffed with experienced people who are examining the construction systems of the three services to see what their present and projected plans call for. He is convinced that some projects in the past have not had the benefit of fine engineering studies; some have not had the economic analysis that should have been applied to them. He believes a well balanced, integrated construction program will be the result of the functions of this section.

Finally, a third division of his office, the Analysis and Review Section, will concern itself with a review of all projects and here will be made the decisions on what will, or will not, be built. A Decision Board, composed of Assistant Secretary Floete, Admiral Jelley, and perhaps an industry representative from outside the Defense Department, was being established to handle this important phase of the work.

To Use Private Firms

Present plans call for the use of engineering firms to make studies of major projects wherever serious arguments develop. Engineering talent abounds within the Jelley office. Last month he had taken three engineers from the Bureau of Yards and Docks, three from the Army Corps of Engineers, one from the Air Force and one from the Department of Defense. Seeking people familiar with the assigned task, Admiral Jelley is planning to have 12 engineers among the 20 persons in his immediate operation. There will be under 50 in the property management office.

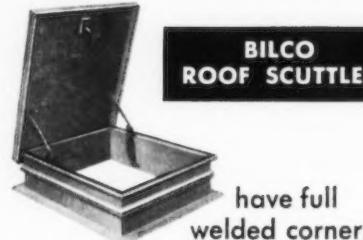
Fiscal 1955 Plans

It is his purpose to submit to Congress all of the fiscal 1955 construction program for the armed forces, knowing that this will be curtailed by the lawmakers. As of September 30, based on total Congressional appropriations made since June of 1948, all the services had put in place 48 per cent of their programs. The breakdown: Air Force, 44 per cent; Navy, 55 per cent, and Army, 45 per cent.

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REQUIRED READING

(Continued from page 48)

SMALLER ENGLISH HOUSES

The Smaller English House 1500 to 1939.
By Reginald Turnor. B. T. Batsford Ltd.
(London, England). Distributed in U. S. A.
by John de Graff, Inc. (New York, N. Y.)
1953. 7 1/4 by 10 in. 216 pp., illus.

ARCHITECTURE for everyone begins with the house; there for many it also ends. Thus until intellect is applied, man's architectural taste is apt to remain a matter of association. Besides this associative taste and the basic taste of the average Englishman, Turnor suggests, is one that follows the course of history. English building, he points out, has made three fundamental changes: "up till the Early Renaissance of Tudor England it was a craft; from then until the heyday of Victorianism it was an art; the Victorians, until the time of Norman Shaw's Domestic Revival, made it into an affair of mostly applied scholarship; and the modernists have turned it into a science." This history of the smaller English house thus divides into phases in which the main influence is of craftsmanship, art, scholarship and science, and through the development of the smaller English house, Turnor tells in terms of style much of the story of English architecture.

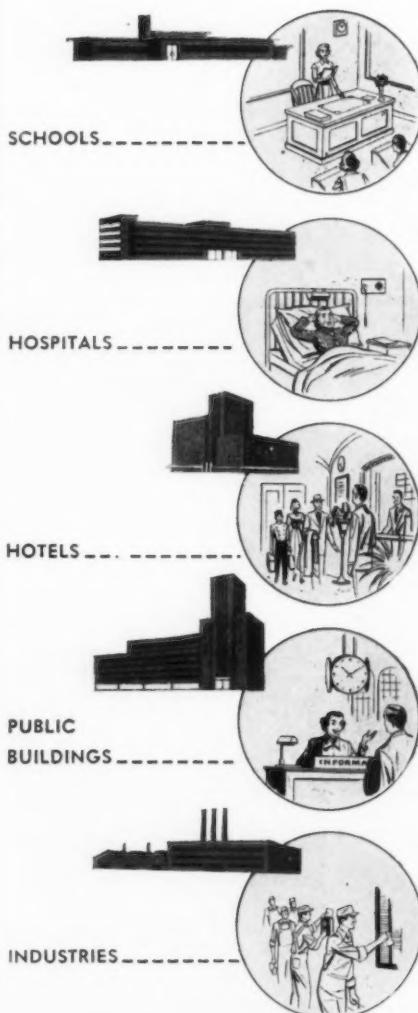
With the early Renaissance influence of John Thynne and John Shute, the smaller house ceased to be a traditional craft structure whose architect is unknown, while Inigo Jones' full Renaissance Queen's House marked the beginning of the house by the named architect. Although relatively few smaller houses were built during the Palladian and Anglo-Classical and Wren periods, the rise of a wealthy middle class under the Georges was accompanied by many architect-designed smaller town and country houses—a trend which continued through the Regency. The Victorians, in their rejection of romance and abandonment of esthetic judgment, Turnor feels, favored religious and moral precepts supported with a scholarship generally misapplied. Toward the close of the 19th century Norman Shaw and his followers brought new life to architecture, while Turnor finishes his history with the 20th century functional plans of such members of the international movement as F. R. S. Yorke, Christopher Nicholson, Olive Hill, Frederick Gibberd and Maxwell Fry.

(Continued on page 282)

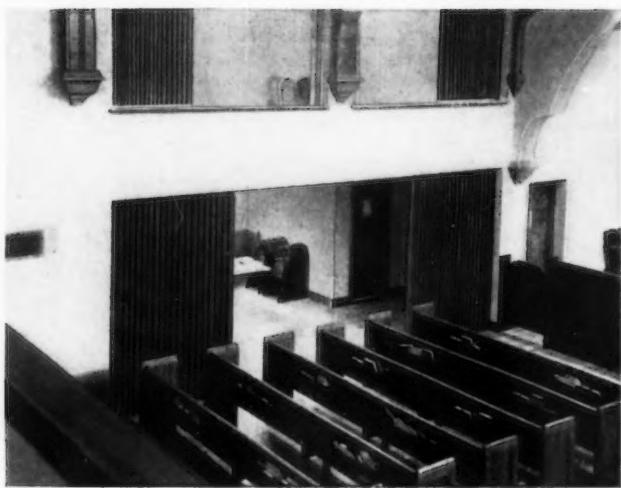
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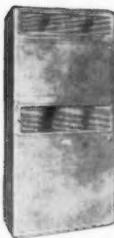


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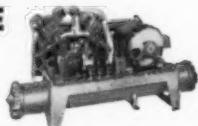
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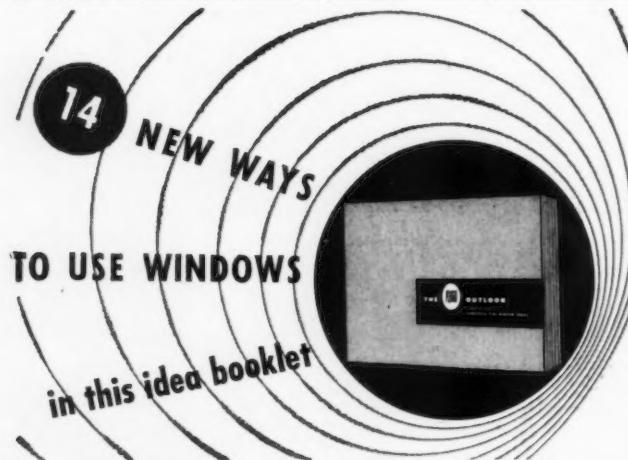
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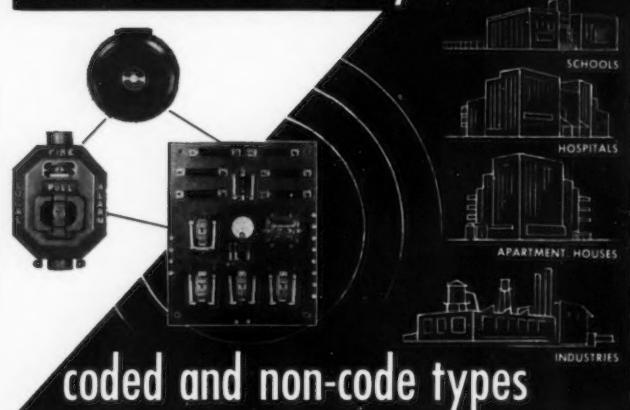
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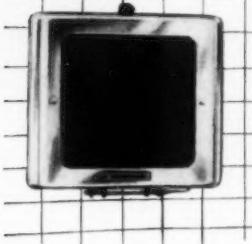
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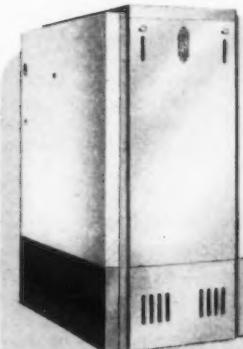
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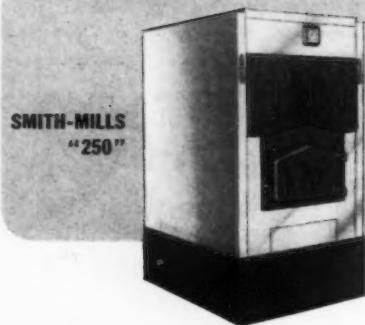


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REQUIRED READING

(Continued from page 278)

Some 190 carefully-selected, well-produced photographs and drawings of 15th to 20th century smaller houses, illustrate Turnor's text. These consist, of course, predominantly of exterior views, with plans and some interiors included.

Turnor traces the progress of building from craftsmanship, art, scholarship, to science — a trend he deplores. Architecture is "at least half an art. . . Art has its own values, and if they are undefinable we must be content not to define them." Looking at the present and toward the future, he feels the need is great for humanistic building in the home of the human being. There, after present expectations of efficiency have been met, man should have a place in which he can "think his thoughts and please his vision."

OTHER BOOKS RECEIVED

World's Contemporary Architecture: Vol. 7: Switzerland. Edited by Yuichi Ino. The Shokokusha Publishing Co., Inc. (Hirakawa, Chiyoda-Ku, Tokyo) 1953. 8½ by 12 in. 88 pp., illus.

Medieval Carvings in Exeter Cathedral. By C. J. P. Cave. Penguin Books, Ltd. (Middlesex, England) 1953. 5 by 7½ in. 64 pp., illus.

Prestressed Concrete. By Y. Guyon. John Wiley and Sons, Inc. (New York, N. Y.) 1953. 6½ by 9¾ in. 543 pp., illus.

Faith Builds a Chapel. By Winifred C. Boynton. Reinhold Publishing Corp. (New York, N. Y.) 1953. 9¼ by 12¼ in. 135 pp., illus.

Pencil Techniques in Modern Design. By William W. Atkin, Raniero Corbelletti, Vincent R. Fiore. Reinhold Publishing Corp. (New York, N. Y.) 1953. 9 by 11¾ in. 122 pp., illus.

The Theory and Practice of Reinforced Concrete. By Clarence M. Dunham. McGraw-Hill Book Co., Inc. (New York, N. Y.) 1953. 6½ by 9¼ in. 499 pp., illus.

Beam Formulas. By A. Kleinlogel. Frederick Ungar Publishing Co. (New York, N. Y.) 1953. 9½ x 6¼ in. 143 pp., illus.

Annual Report of the Board of Regents of the Smithsonian Institution. Publication 4111. United States Government Printing Office. (Washington, D. C.) 1953. 6½ by 9¾ in. 461 pp., illus.

Electronic Organs, a Complete Catalogue, Textbook and Manual. By Robert L. Elby. Van Kampen Press, Inc. (Wheaton, Ill.) 1953. 6 by 8½ in. 213 pp., illus.

Simplified Problems in Strength of Materials and Structural Design. By Ephraim Viertel, Edward W. Sweetman, Publisher. (New York, N. Y.) 1953. 5¾ by 8¾ in. 636 pp.

How to determine unit cost of house construction

—a simplified method
applying to all designs
and local price
variations

THIS book takes up all phases of building a house — earthwork, masonry, carpentry, plastering, plumbing, etc. Tells how to determine costs for every operation; includes data on quantity of material and number of labor hours needed; gives worked-out examples of typical unit costs. As helpful background, it includes structural details and methods of operation for many aspects of home construction. Compares all methods of estimating; gives pointers on the cost summary sheet; shows how to figure exact costs of building a house in any price range, location, or size. Gives full coverage to heating with forced air, one-pipe steam, and one-pipe forced hot water.

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Tells how to make a profit with minimum risk; how to minimize business errors and increase your chances of success. Gives tips on estimating operating costs, accounting, selling, and financing. Points out legal pitfalls. Discusses purchase and development of land, figuring a budget, etc., etc. By B. K. JOHNSTONE and C. E. JOERN. 289 pages, 6 x 9, \$4.50.

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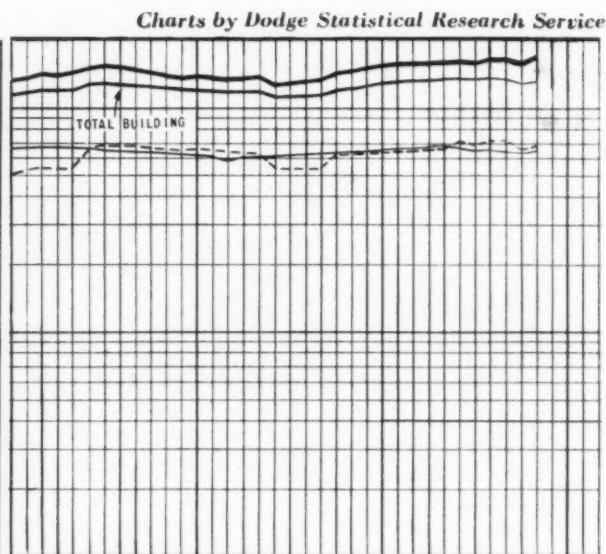
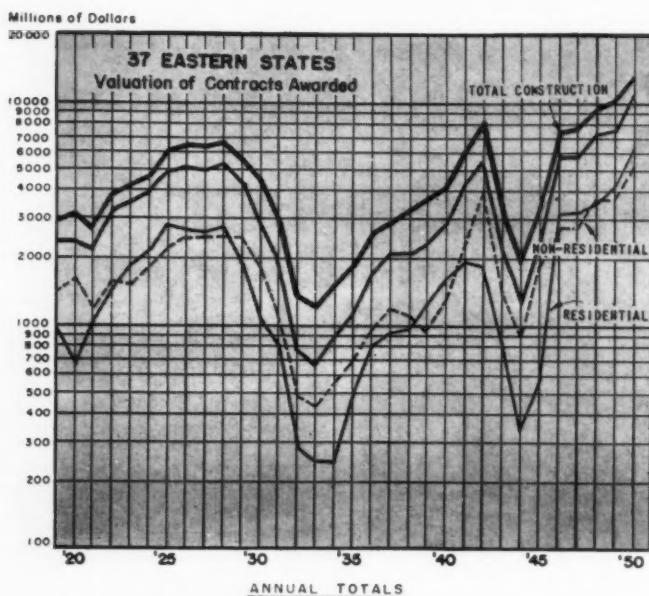
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CURRENT TRENDS IN CONSTRUCTION



CONTRACTS SET NEW HIGHS

Construction contract awards as reported by F. W. Dodge Corporation reached a new 1953 high in October and appeared to be heading for an all-time high record for the year.

The October contracts reached unexpectedly large construction volume in almost all categories and totaled 44 per cent above October a year ago. The ten-month cumulative total was five per cent ahead of last year's \$14,058,749,000 figure.

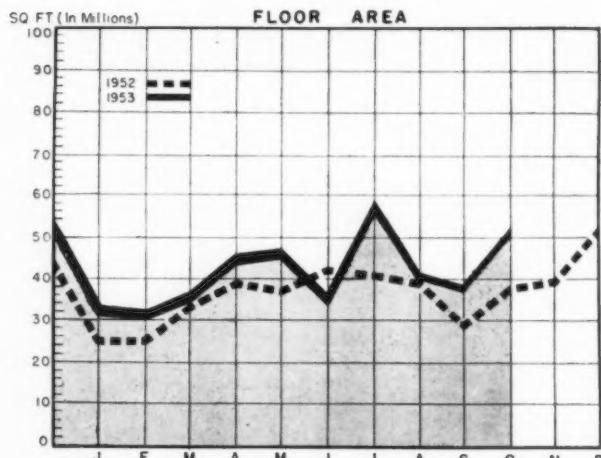
Residential building which had been faltering slightly showed a five per cent rise over last October, the principal gain being in dwellings built for owner occupancy. Non-residential building, paced by the commercial building category, recorded a 61 per cent increase over last October. Manufacturing building also showed a sharp increase over 1952 as did educational, hospital, religious, and social and recreational work.

Heavy engineering work in October was valued at \$499,700,000 and represented a two-fold increase over October 1952. The one F. W. Dodge contract category showing a slight decline in October was dwellings built for sale or rent. These declined from a total of \$352,830,000 last year to \$348,156,000 this year.

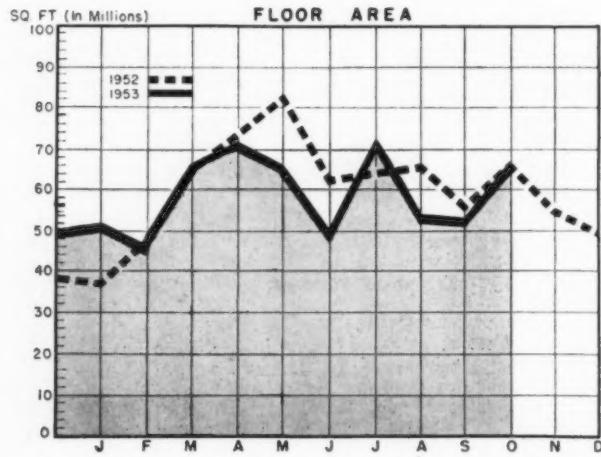
RELIGIOUS BUILDING CONSTRUCTION 1939 — 1953
Floor Area — Thousands of Sq Ft (37 Eastern States)

Year	Annual Total	Monthly Average	1953	Monthly Total
1939	6,213	518	Jan.	1,524
1940	7,108	592	Feb.	1,471
1941	8,567	714	Mar.	1,806
1942	3,477	290	Apr.	2,901
1943	1,001	83	May	2,823
1944	1,420	118	June	2,180
1945	4,569	381	July	3,057
1946	8,404	700	Aug.	2,579
1947	12,282	1,023	Sept.	2,553
1948	21,162	1,763	Oct.	2,799
1949	24,598	2,050	10 Mos.	23,693
1950	29,371	2,448		
1951	25,133	2,094		
1952	22,295	1,858		

NONRESIDENTIAL BUILDING (37 EASTERN STATES)



RESIDENTIAL BUILDING (37 EASTERN STATES)



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Architects, likewise, who have become acquainted with KAYLINE know that they have made a "find". True, KAYLINE is not the largest manufacturer of fixtures, but no one gives better service. KAYLINE does not make thousands of different types of fixtures, but the types it does make are outstanding for their purpose.

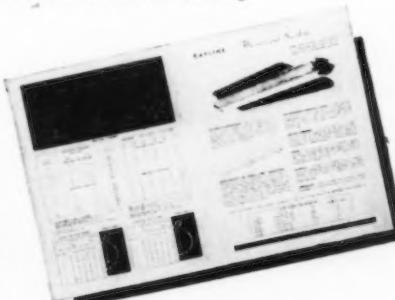
KAYLINE'S purpose is not to produce the most...or sell the most...but to create for those who appreciate quality...because there is no substitute for quality in lighting, as there is no substitute for a person's eyes.

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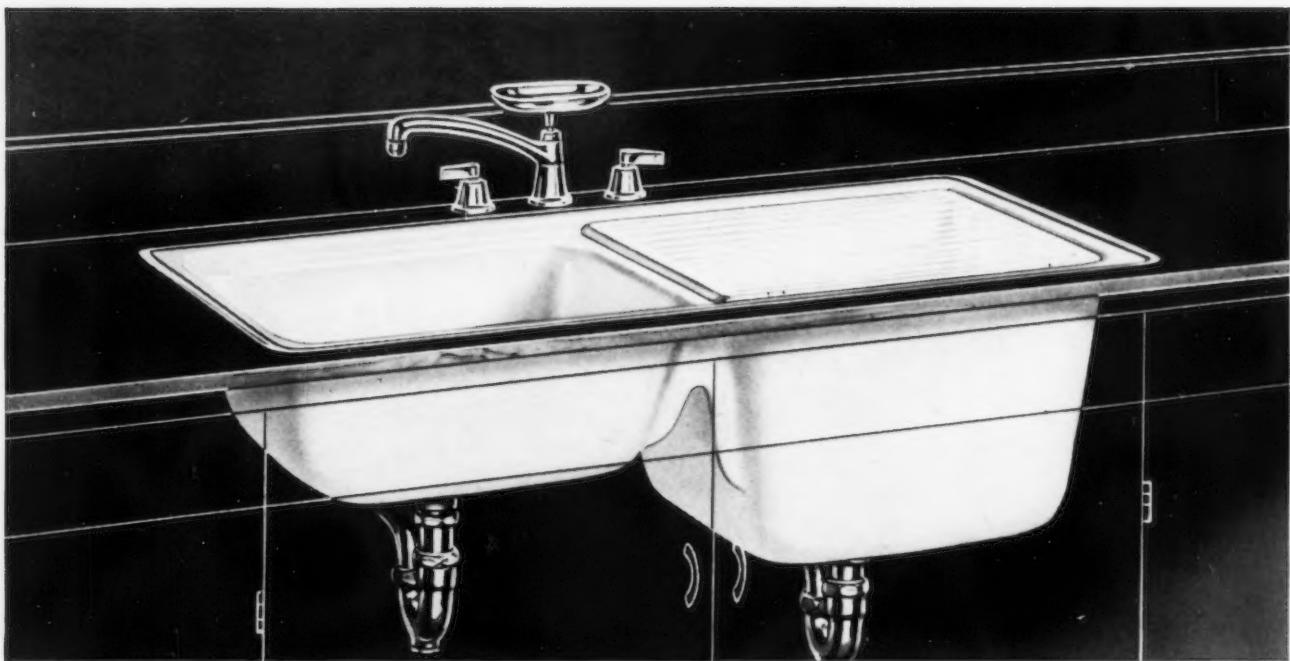
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Alloway, 42" x 20"



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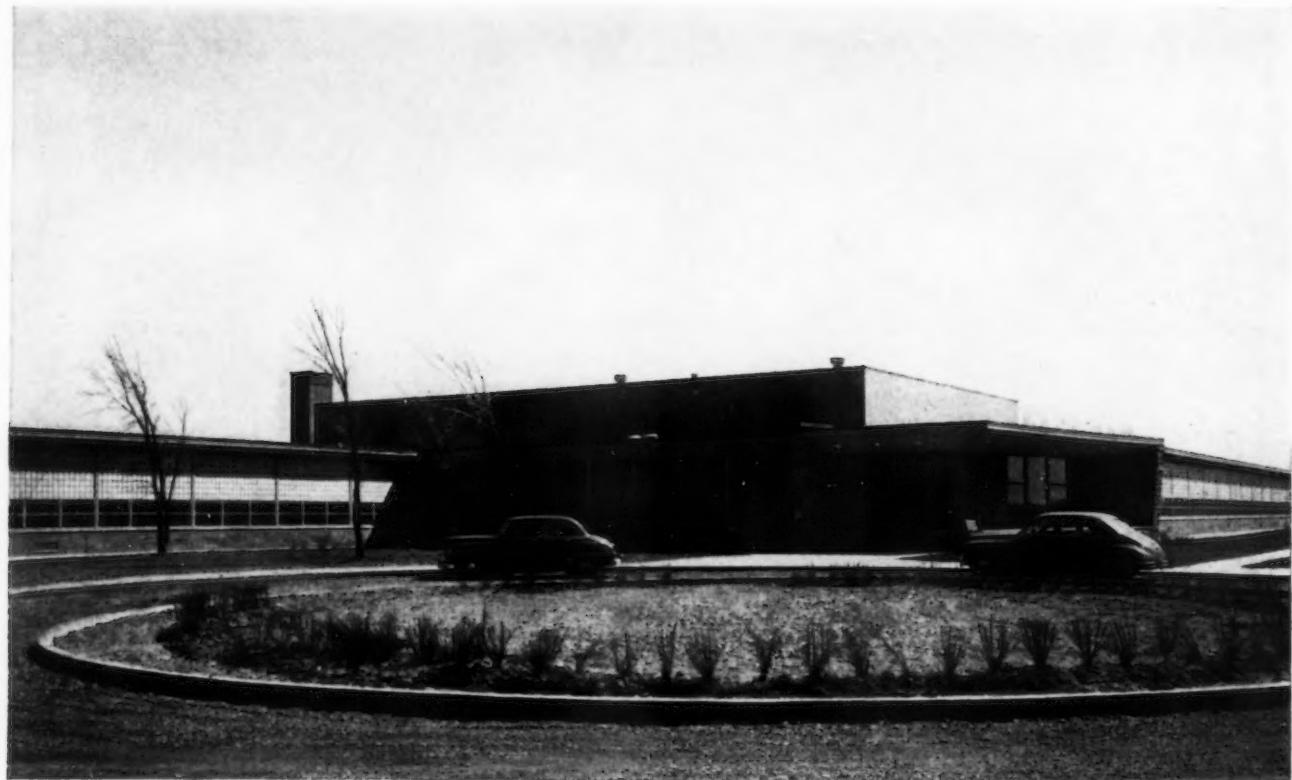
Westover, 42" x 21"



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William M. Kaegebein School, Grand Island, N. Y., near Buffalo, has Bethlehem Open-Web Joists in roof construction. Architect: Roswell E. Pfohl, Buffalo; Contractor: Allgaier Construction Corporation, Cheektowaga, N. Y.

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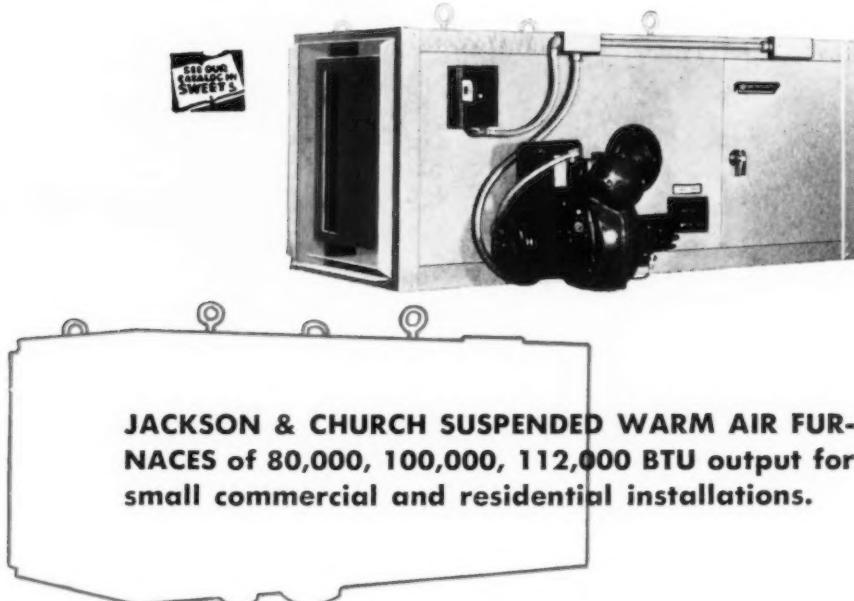
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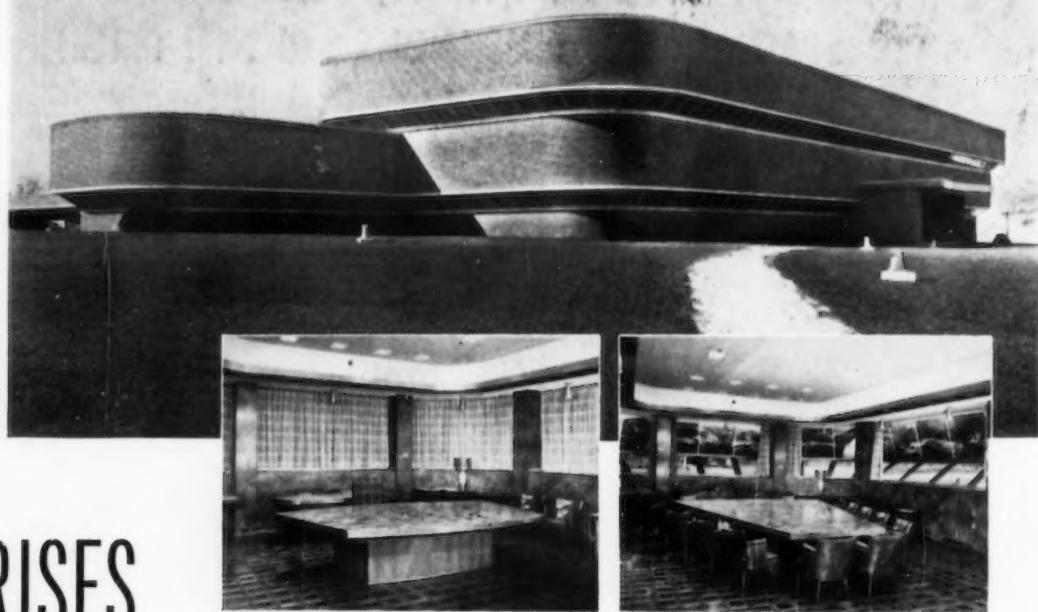
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